

ANNUAL REPORT
OF THE
PUBLIC PRINTER

1930

GOVERNMENT PRINTING OFFICE :: WASHINGTON

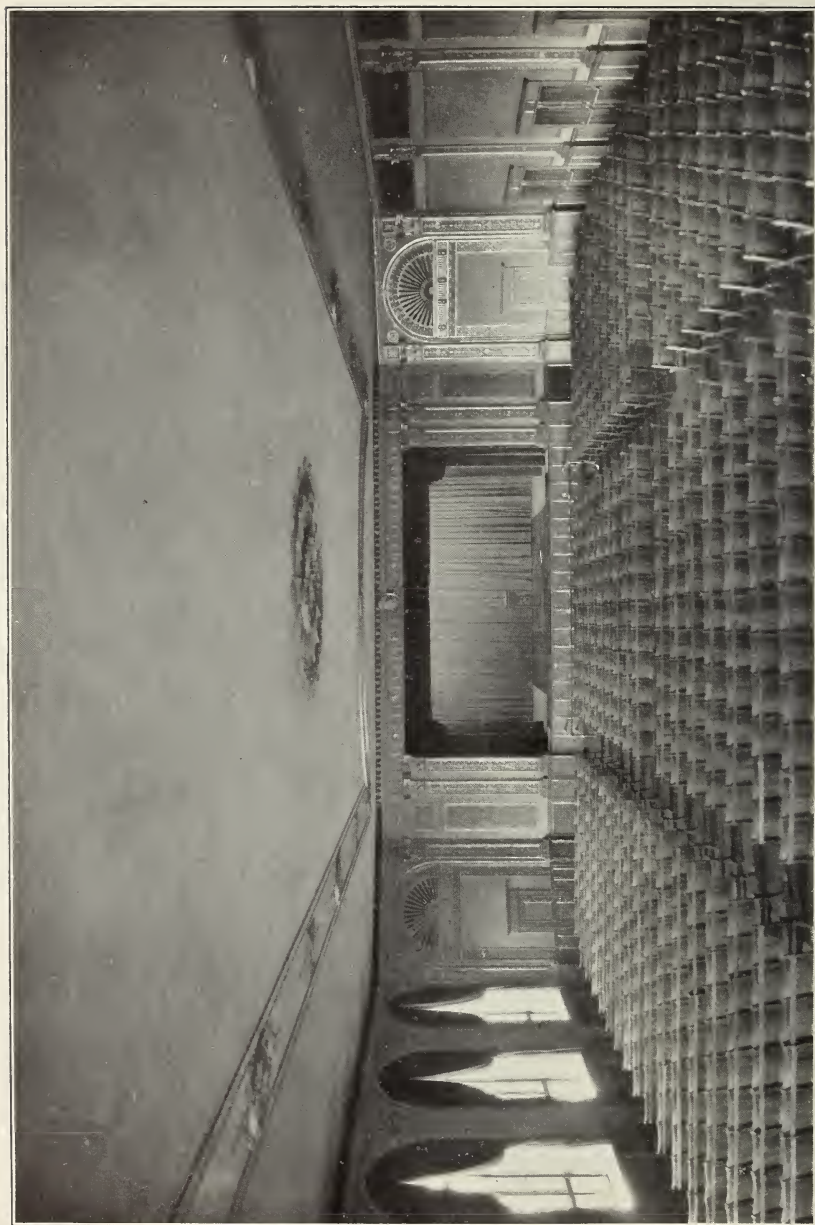


NEW EXTENSION

MAIN BUILDING

UNITED STATES GOVERNMENT PRINTING OFFICE

OLD BUILDING



HARDING HALL
UNITED STATES GOVERNMENT PRINTING OFFICE

UNITED STATES GOVERNMENT PRINTING OFFICE

GEORGE H. CARTER, Public Printer

ANNUAL REPORT
OF THE
PUBLIC PRINTER

1930



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1931

UNITED STATES GOVERNMENT PRINTING OFFICE

Public Printer.—GEORGE H. CARTER, Iowa

Deputy Public Printer.—JOHN GREENE, Massachusetts.

Production Manager.—ELLWOOD S. MOORHEAD, Pennsylvania.

Assistant to Public Printer.—Miss MARY A. TATE, Tennessee.

Chief Clerk.—HENRY H. WRIGHT, New York.

Assistant Chief Clerk.—ERNEST C. MELLOR, Maryland.

Superintendent of Accounts and Budget Officer.—JAMES K. WALLACE, Ohio.

Assistant Superintendent of Accounts.—J. THOMAS FORD, Nevada.

Purchasing Agent.—ERNEST E. EMERSON, Maryland.

Assistant Purchasing Agent.—WILLIAM J. CASSIDAY, District of Columbia.

Technical Director.—BYRON L. WEHMHOF, Washington.

Disbursing Clerk.—EDWARD J. WILVER, Pennsylvania.

Deputy Disbursing Clerk.—J. BASIL PERKINS, Minnesota.

Medical and Sanitary Director.—Dr. DANIEL P. BUSH, Nebraska.

Assistant Medical and Sanitary Director.—Dr. ARTHUR G. HUNT, Oklahoma.

Superintendent of Documents.—ALTON P. TISDEL, Ohio.

Assistant Superintendent of Documents.—Miss JOSEPHINE G. ADAMS, District of Columbia

Superintendent of Planning.—WILLIAM A. MITCHELL, North Carolina.

Assistant Superintendent of Planning.—LOUIS C. VOGT, Florida.

Superintendent of Printing.—HERMANN B. BARNHART, Indiana.

Assistant Superintendent of Printing.—MAURICE H. PHILLIPS, Ohio.

Foreman Linotype Section.—WILLIAM D. SKEEN, Pennsylvania.

Foreman Monotype Section.—WILL H. CHASE, Maryland.

Foreman Proof Section.—MARION E. BULLOCK, Maryland.

Foreman Patents Section.—RAYMOND H. LECRAW, Rhode Island.

Foreman Hand Section.—HUGH REID, Wisconsin.

Foreman Job Section.—ALLAN C. CLOUGH, New Hampshire.

Foreman Library Printing Branch.—JAMES H. HESLET, Kansas.

Chief Type Machinist.—DANIEL L. LIDDLE, Michigan.

Superintendent of Presswork.—BERT E. BAIR, Michigan.

Assistant Superintendent of Presswork.—DANIEL BECKWITH, New Hampshire.

Foreman Main Press Section.—DANIEL I. LEANE, New York.

Foreman Job Press Section.—JAMES E. VEATCH, New York.

Foreman Postal Card Section.—JOSEPH A. FENTON, Michigan.

Foreman Money Order Section.—JOHN A. MASSEY, Jr., Georgia.

Superintendent of Binding.—MARTIN R. SPEELMAN, Missouri.

Assistant Superintendent of Binding (Book Section).—JOHN A. PATTERSON, New York.

Foreman Pamphlet Section.—RALPH W. HOWARD, District of Columbia.

Foreman Blank Section.—WALTER H. OLIVER, Maine.

Foreman Library Binding Branch.—GEORGE R. ERLER, Maryland.

Superintendent of Platemaking.—EDWARD G. WHALL, Massachusetts.

Assistant Superintendent of Platemaking.—EDWARD A. KERR, Massachusetts.

Foreman Finishing Section.—CHARLES H. HANSON, Pennsylvania.

Foreman Molding Section.—THOMAS H. MUMFORD, Jr., Pennsylvania.

Foreman Photo-Engraving Section.—JOHN WALTER, Maryland.

Night Production Manager.—EDWARD A. HUSE, Massachusetts.

Assistant Night Production Manager.—JOHN M. WILSON, Kansas.

Assistant Superintendent Presswork, night.—CHARLES C. GASTROCK, Pennsylvania.

Foreman Linotype Section, night.—HARRY L. MURRAY, Pennsylvania.

Foreman Monotype Section, night.—WILLIAM A. MORRIS, Missouri.

Foreman Proof Section, night.—HARRY B. GOODRELL, Iowa.

Foreman Hand Section, night.—GEORGE O. ATKINSON, Massachusetts.

Assistant Foreman Pamphlet Section, night.—ALBERT LINDSTROM, Missouri.

Assistant Foreman, Platemaking, night.—HERMAN C. GROTH, Pennsylvania.

Superintendent of Construction and Maintenance.—ALFRED E. HANSON, Massachusetts.

Chief Carpenter.—ABRAHAM B. BATTON, Maryland.

Chief Machinist.—MICHAEL J. MCINERNEY, New York.

Chief Electrician.—EDWARD H. BRIAN, District of Columbia.

Chief Engineer.—WALTER A. BROWNE, New Hampshire.

Chief Pipefitter.—OVLUP H. GEORGE, New York.

Construction Foreman.—EDWARD M. LILLEY, Maryland.

Foreman Sanitary Section.—JOSEPH L. MAY, Virginia.

Storekeeper and Traffic Manager.—WILLIAM H. KERVIN, New York.

Assistant Storekeeper.—JOHN F. HYSAN, Maryland.

Chief Instructor of Apprentices.—BURR G. WILLIAMS, Iowa.

Assistant Chief Instructor.—FRANK M. ROLLER, Pennsylvania.

Assistant Chief Instructor.—NATHANIEL G. WATTS, Missouri.

Congressional Record Clerk (Capitol).—WILLIAM A. SMITH, District of Columbia.

Chief of Delivery.—WALTER G. COPP, Maryland.

Captain of Guards.—CHARLES H. WARNER, Maryland.

ANNUAL REPORT OF THE PUBLIC PRINTER

UNITED STATES GOVERNMENT PRINTING OFFICE,
OFFICE OF THE PUBLIC PRINTER,
Washington, D. C., January 10, 1931.

To the Congress of the United States:

In compliance with law, I have the honor to submit the following report on the work of the Government Printing Office for the fiscal year ended June 30, 1930, and also for the last half of the calendar year 1930.

This is the tenth of the annual reports, including the fiscal years 1921-1930, that have been submitted to Congress by the present Public Printer, who took charge of the Government Printing Office on April 5, 1921, and has served for a longer consecutive period than any of his 10 predecessors since its establishment on March 4, 1861.

Only one other Public Printer, John D. Defrees, appointed by President Lincoln on March 23, 1861, had a longer service—12 years, 5 months, and 4 days—which covered three different periods, under Presidents Lincoln, Johnson, Hayes, Garfield, and Arthur.

The present Public Printer has held office under Presidents Harding, Coolidge, and Hoover, and was clerk of the congressional Joint Committee on Printing during the administrations of Presidents Taft and Wilson.

THANKS TO JOINT COMMITTEE ON PRINTING

In this connection the Public Printer desires to express his sincere thanks to the former chairmen of the Joint Committee on Printing, Senator Reed Smoot, of Utah, Senator Duncan U. Fletcher, of Florida, the late Senator Marcus A. Smith, of Arizona, and to the present chairman, Senator George H. Moses, of New Hampshire, with whom in succession he has been highly privileged to associate as committee clerk and Public Printer during the last 20 years.

To their able advice and cordial cooperation, along with the generous support of every member of the joint committee, all of whom have unhesitatingly placed public service above personal or political opinions, is due the utmost credit for the high standard that has been attained by the Government Printing Office in recent years as a model for the printing industry of the entire world and a notable example of efficiency in Government service.

CONGRATULATIONS ON NINTH ANNIVERSARY

On April 5, 1930, the ninth anniversary of service in his present position, the Public Printer received numerous letters of congratulation on the progress made in the Government Printing Office during the nine years. The following letter from Hon. Clarence Cannon, a member of the subcommittee of the House Committee on Appropriations which considers and reports the annual appropriations and legislation for the Government Printing Office, was especially pleasing:

HOUSE OF REPRESENTATIVES,
COMMITTEE ON APPROPRIATIONS,
Washington, D. C., April 10, 1930.

HON. GEORGE H. CARTER,

The Public Printer,

Government Printing Office, Washington, D. C.

DEAR MR. CARTER: Permit me to extend warmest felicitations on the celebration of your ninth anniversary as Public Printer of the United States.

I regret that you could not have heard the warm commendation of your administration and the economy and efficiency of the Government Printing Office under your jurisdiction as expressed by the members of the Committee on Appropriations following your hearing before the subcommittee last week.

With heartiest congratulations and best wishes,

Your friend,

CLARENCE CANNON.

Another letter on this occasion, which the Public Printer takes pleasure in quoting, came from the Director General of the Pan American Union, Dr. L. S. Rowe:

Permit me to congratulate you on the completion of the ninth anniversary of your service in the important post that you now occupy. You have every reason to feel gratified in looking back upon the splendid record that you have made.

Permit me on behalf of the Pan American Union to express to you not only congratulations but also a deep sense of obligation for the splendid service which you have rendered to this institution.

COMMENDATION BY TYPOTHETÆ OFFICIALS

Several members of the administrative staff of the United Typothetæ of America happened to make an extensive inspection of the Government Printing Office about the time of the Public Printer's ninth anniversary. Their opinion of its condition, as expressed in a letter from Mr. John J. Deviny, secretary of the United Typothetæ of America, seems appropriate to quote in this report of the improvements that have been made during the present administration. Mr. Deviny wrote as follows, under date of April 4, 1930:

On behalf of Mr. Fred J. Hartman, director of our department of education, Mr. W. D. Hall, acting director of the department of production management, and myself, I hereby express our appreciation of the courtesies and kindnesses

shown us by yourself upon the occasion of our visit to the Government plant on Wednesday.

We also were delighted with the evidence of progress indicated on every hand in the practices and policies employed in handling the great volume of printing entrusted to the care of your department.

It is especially appropriate that the Government Printing Office should keep in step with the great progress being made in the printing industry, and it is a source of satisfaction to know that you are successfully guiding your institution in that direction.

TEN YEARS OF PROGRESS

During the 10 fiscal years 1921–1930 the Public Printer has been responsible for the expenditure of \$128,635,276.68, the available resources of the Government Printing Office for that period. Of this amount \$10,615,764.83 has been returned to the Treasury of the United States as unobligated balances and miscellaneous receipts and thus made available for other use by the Government.

In the expenditure of \$118,019,511.85 during the 10 years the auditing disallowances have totaled less than \$1,200, for which the Government has been fully reimbursed.

Expenditures for the 10 years 1921–1930 included \$79,218,396.05 for compensation of employees, an increase of \$26,293,404.35, or 50 per cent, over the preceding 10-year period 1911–1920.

The total compensation for an average of 13 per cent more employees in the fiscal year 1920 was 16 per cent less than for the smaller force in the fiscal year 1930, as shown by the following comparison: 1920, average number of employees, 4,989, compensation, \$8,342,612.82; 1930, average number of employees, 4,356, compensation, \$9,683,066.41. The leave and holiday pay of employees for 1920 amounted to \$882,492.47, and for 1930, \$1,277,696.68, an increase of \$395,204.21, or 45 per cent.

BENEFITS OF WAGE NEGOTIATIONS

Due to the benefits of the Kiess Wage Act of 1924, which authorizes collective wage negotiations from time to time, the average earnings of employees have advanced from \$1,672.20 for the fiscal year 1920 to \$2,222.92 for 1930, an increase of \$550.72, or 33 per cent in the annual average.

Paper purchases during the 10 years 1921–1930 cost \$31,654,825.14, or \$8,819,576.37 (39 per cent) more than for the preceding 10 years 1911–1920. Machinery purchases for 10 years, 1921–1930, totaled \$1,528,035.85. Although comparative figures are not available for the entire 10 years 1911–1920, machinery purchases during that period were certainly much less, as indicated by the cost in 1920 of \$97,572, which was more than doubled in 1930 with a total machinery expenditure of \$199,771.55.

The tremendous growth in the work of the Government Printing Office during the 10 years 1921-1930 is shown by the increase of 39 per cent in the computed value of its products, which totaled \$117,256,250.97 for the 10 years 1921-1930, as compared with \$84,262,580.79 for the 10 years 1911-1920.

The better efficiency of employees during the 10 years, 1921-1930, aided greatly in surpassing the production of the preceding 10 years. For instance, the linotype machine operators increased their average number of ems set per hour from 3,545 in the fiscal year 1920 to 5,118, or 44 per cent more, for the fiscal year 1930. Likewise, the monotype keyboard operators increased their average number of ems per hour from 4,528 in 1920 to 7,214 in 1930, a gain of 59 per cent. Similarly, nearly every bindery operation showed large increases for the fiscal year 1930 over 1920.

The production of postal cards nearly trebled, the output for the fiscal year 1920 being 699,300,420, as compared with 1,731,266,760 cards printed during 1930. In the last 10 years a total of 15,177,108,412 postal cards have been printed. The vast increase in postal service printing during the 10 years 1921-1930 is further shown in the supply of 9,815,523 money-order books, each containing 200 forms. The number of money-order books produced in 1920 was 773,930, as compared with 1,055,312 books in 1930, an increase of 36 per cent.

GREATER PRODUCTION—FEWER EMPLOYEES

The greater production during the fiscal years 1921-1930 was accomplished with several hundred fewer employees than were on the rolls throughout the preceding 10 years 1911-1920. The average number of employees for the fiscal year 1920 was 633 more than the average for 1930. The maximum number on the rolls in 1920 was 5,214, or 747 more than the highest number employed at any one time in the fiscal year ended June 30, 1930.

The larger number of employees in 1920 were required to work 335,480 hours on overtime, Sundays, and holidays, while in the fiscal year 1930, due principally to the emergencies of tariff printing, the overtime, Sunday, and holiday work had to be increased to 478,557 hours. The extra pay thus earned by employees in 1930 amounted to \$566,581.08, as compared with \$303,473.83 paid for overtime, Sunday, and holiday work in 1920. The granting of higher rates of pay for overtime, Sunday, and holiday work, as authorized by the Kiess Wage Act of 1924, accounts for the great increase of compensation for the extra hours of labor in 1930.

EMPLOYMENT RECORD

In view of the general unemployment situation, a vigorous effort has been made since July 1, 1930, to reduce the amount of overtime by employing a larger force to handle the constantly increasing work of the office. This situation was anticipated during the fiscal year 1930, when 232 employees were added to the rolls, bringing the total on July 1, 1930, up to 4,419. From July 1, 1930, to date 563 more persons, including 155 on call, have been given employment, making an addition of 795 employees to the force since July 1, 1929. The number of employees on the rolls on December 31, 1930, was 4,827, which is still 387 less than the peak number in 1920. With the appointments pending, the total enrollment will be approximately 4,982, the maximum number that the present work will justify.

ASSISTANCE PLEASES THE PRESIDENT

The efforts of the Public Printer to assist in providing work for the unemployed was recently called to the attention of the President of the United States, who expressed his commendation of this assistance in the following letter:

THE WHITE HOUSE,
Washington, November 4, 1930.

MR. GEORGE H. CARTER,

Government Printing Office, Washington, D. C.

MY DEAR MR. CARTER: I was delighted to have your letter to-day indicating the fine assistance your Bureau is contributing to the general situation.

Yours faithfully,

HERBERT HOOVER.

APPRECIATED BY TYPOGRAPHICAL UNION

Columbia Union No. 101, International Typographical Union, of Washington, also expressed appreciation of the Public Printer's effort to aid employment by adoption of the following resolution at its regular meeting on December 21, 1930:

Whereas the present session of Congress has been devoted chiefly to the general unemployment situation, which, now as the winter months are setting in, makes the suffering among the millions out of work more distressing; and

Whereas Public Printer George H. Carter, by eliminating overtime to a minimum, has increased the force at the Government Printing Office by approximately 800; and

Whereas to further relieve distress among the unemployed in Washington the Public Printer has appealed to the Civil Service Commission to waive, temporarily at least, the geographic provisions of the rules—in short, to cut out some of the unnecessary red tape during these trying times in relieving distress by putting men and women to work—which will enable him to use local help rather than from far-distant localities; and

Whereas Columbia Typographical Union has in the past been able to take care of its unemployed members, but realizing the general "economic earthquake," has to-day made provision in its regular meeting to provide means to meet the present unusual unemployment condition affecting its own craft: Therefore be it

Resolved, That Columbia Typographical Union No. 101 in regular meeting assembled does hereby heartily and unreservedly indorse the action of Public Printer Carter in his efforts to relieve unemployment here in Washington; and be it further

Resolved, That copies of this resolution be furnished the President of the United States, the Civil Service Commission, the Public Printer, and the local press.

REDUCTION IN THE OVERTIME WORK

A result of the increased force since July 1, 1930, is shown by the great reduction in the hours of overtime, Sunday, and holiday work required of employees during the first six months of the present fiscal year as contrasted with the extra hours of employment in the first six months of the preceding fiscal year. Overtime, Sunday, and holiday work for the six months ending December 31, 1929, totaled 280,174 hours, and for the six months ending December 31, 1930, 28,214 hours, a decrease of 251,960 hours.

Notwithstanding the great reduction in extra hours of work, the larger force actually working during the first six months since July 1, 1930, produced printing and binding to the computed value of \$406,000 more than the computed products for the first six months of the preceding fiscal year, based on the same scale of prices.

In addition to providing work for more employees in the Government Printing Office since July 1, 1929, the Public Printer has also materially aided employment elsewhere by purchases of machinery, paper, materials, and supplies amounting to \$8,288,684.23 in the period of business depression and unemployment from July 1, 1929, to December 31, 1930. During that time \$5,175,157.09 was spent for paper and envelopes alone. The manufacture of these products gave employment to a large number of workmen throughout the country.

PURCHASES ALSO AIDED EMPLOYMENT

The increase of purchases to aid employment elsewhere and to meet the growing needs of this office was especially timely and highly commended by several manufacturers who otherwise might have been compelled to discharge many of their employees. One of the largest paper mills in the country, in expressing appreciation of increased orders for its products, replied:

We wish to thank you for the splendid cooperation you are giving us in trying to hold together our organization and keep them employed.

The president of a well-known printing-machinery company, in acknowledging the receipt of a substantial order for a number of its machines, wrote to the Public Printer recently:

The work of building these machines contributed very largely to our being able to keep our factory people employed during the past three very dull months, so that the Government Printing Office has made a very substantial contribution toward the prevention of unemployment.

The Government Printing Office has also rendered service to the President's Emergency Committee for Employment by expediting numerous printing jobs required to carry on the urgent work of that organization. Thanking the Public Printer for this assistance, the Secretary of Commerce stated in a letter of November 11, 1930:

We were very much pleased with the expeditious handling of this copy by your office. Your assistance will enable the President's Emergency Committee for Employment to make distribution of the volume promptly and thereby increase its effectiveness at a time when it will do the most good. Your assistance is greatly appreciated.

NEW EXTENSION HELPED EMPLOYMENT

Construction of the \$1,250,000 extension to the main building of the Government Printing Office, which was completed on November 29, 1930, likewise provided work for many more men in Washington and elsewhere during the last two years.

The new extension will be fully occupied by the entire Division of Construction and Maintenance, including its machine, carpenter, paint, electrical, pipe, sheet-metal, blacksmith, and buildings sections; the Division of Tests and Technical Control, including its extensive laboratory, ink, glue, and press roller rooms; the Apprentice School; sections of the Platemaking, Presswork, Stores, Accounts (including its files), and the Document Division, including its library and sales office; all of which heretofore had inadequate quarters, either in the main or old building.

APPRENTICE SCHOOL IN NEW QUARTERS

The first unit to move into the extension was the Apprentice School, which occupied its new quarters on August 8, 1930. Since then several other units have been transferred to the extension, and it is planned to have all the moving completed in a few months, when the much needed 8-story extension and garage will be entirely occupied.

The equipment and occupation of the new quarters required much extra work, giving additional employment to a large number of men, both in Washington and wherever the new machines and extensive equipment have been made.

NEW BUILDING PROPOSED

A still further opportunity to provide work during the present unfortunate situation is presented in the Public Printer's proposal of a much needed new building to replace the old dilapidated structure, which has been a fire trap for more than half a century. With the removal of all the construction shops and the clerical force of the documents office to the new extension of the main building, the old building, part of which was erected in 1856, must be used for storage and warehouse purposes until replaced by a fireproof structure.

The fire menace of the old building, with its all-wooden interior and inflammable contents, has been called to the attention of Congress repeatedly by preceding Public Printers, and it now seems timely to renew their recommendations for the erection of a modern fireproof structure in place of the old, ramshackle building.

The rapidly increasing work of the Government Printing Office requires additional space if it is desired to have this establishment function with proper efficiency. It is equally vital that the vast stores, representing an investment of millions of dollars, be adequately safeguarded and conveniently located. For several years additional warehouse space has had to be rented in a remote place at a cost of \$1,000 per month.

The urgent need of a new building to replace the ancient structure was reviewed in the Public Printer's report last year and was discussed at that time with the legislative subcommittee of the House Committee on Appropriations, although a formal estimate was not submitted for its consideration.

BUDGET ESTIMATE FOR NEW BUILDING

The Budget for 1932, as recently transmitted to Congress by the President, submits an authorization of \$4,000,000 for a new building for the Government Printing Office and provides an appropriation of \$1,000,000 to begin and carry on the work during the coming fiscal year. The Budget paragraph, as proposed for enactment in the legislative appropriation bill of the present session of Congress, reads as follows:

New building for the Government Printing Office—

There is hereby authorized an appropriation of not to exceed \$4,000,000 for demolishing and removing old buildings now owned by the United States and occupied by the Government Printing Office on the site bounded on the north by H Street Northwest, on the east by North Capitol Street, on the south by area formerly known as Jackson Alley, and extending west approximately three hundred and eighty-four feet from North Capitol Street, and for constructing on said site or a part thereof a suitable building for the use of the Government Printing Office, connecting with the present main building and including eleva-

tors, conveyors, steel shelving, and heating, lighting, plumbing, and other necessary fixtures: *Provided*, That the preparation of plans, advertisement for bids, and award of contracts therefor and the supervision and approval of the work shall be under the direction of the Secretary of the Treasury, who is hereby authorized and directed to enter into contracts for the undertaking and completing the entire work at not to exceed the specified limit of cost: *Provided further*, That the demolition of the old buildings and the plans and design of the new building shall be subject to approval by the Public Printer. To begin and carry on the work according to the foregoing authorization the sum of \$1,000,000 is hereby appropriated, to remain available until expended (submitted).

The Budget for 1932 also contains the following note in explanation of the foregoing appropriation:

The old buildings, with wooden floors and supports and rambling interior construction, have been repeatedly condemned as a fire trap and serious fire hazard to the entire plant, and Army engineers have placed the safe load limit at a very low point. The weakened condition prevents proper and efficient use of the old buildings; constant and extensive repair is necessary, and lack of usable space requires expensive outside rental for storage purposes. The rapidly increasing work of the Government Printing Office demands additional operating room, which only can be secured by erection of the new building herein estimated for. The urgent need of a new building was fully set forth in the Annual Report of the Public Printer, 1929.

NEED OF A NEW BUILDING EXPLAINED

To complete the statement in regard to the need for a new building, the following extract is quoted from the Public Printer's report for 1929, pages 40 to 42, inclusive:

With the removal of the shops and stores from the old 4-story building at the corner of North Capitol and H Streets, that ancient structure, erected in 1856, will be used as a warehouse for paper and other materials. Unfortunately, owing to its age and weakened condition, the floor-load limits are very restricted. Less than half of the space can be utilized with safety, according to load limits fixed by engineers many years ago.

The old building, with its wooden floors and supports and its rambling interior construction, has been repeatedly condemned as a fire trap and a serious hazard to the entire plant. It ought to be torn down and replaced as soon as possible by a modern fireproof structure having a frontage of at least 384 feet on H Street and 175 feet on North Capitol Street, the space now occupied by the old 4-story building and the documents office. An 8-story building of that size would cost approximately \$4,000,000.

A new building is urgently needed for adequate warehouse facilities and for safe storage of the immense stock of valuable publications which this office has to maintain for sale and for use by other departments of the Government. With the rapidly increasing work of the Government Printing Office, additional room will also be needed soon for the bindery and printing divisions. They are already badly crowded and have no other space available for necessary expansion.

In such a structure space could also be provided for storing and mailing the vast number of documents printed for distribution by Members of Congress.

These documents are now delivered to the Capitol for storage and subsequently conveyed to the city post office, near the Government Printing Office, for transmission through the mails.

Storage in a building adjacent to the Government Printing Office would make it possible to carry all these publications only a short distance from the work-rooms to the new warehouse, from which an automatic conveyor could deliver them direct to the city post office in a few minutes. In the same way the millions of publications mailed annually by the Superintendent of Documents are now carried by a belt conveyor, with a capacity of 360 sacks of mail an hour, running from the documents building through a tunnel to the city post office.

The plan here proposed would be far less expensive than the present slow and cumbersome method of handling the many hundred thousand documents printed annually for congressional distribution. But an even more important reason for the storage of documents in a fireproof building at the Government Printing Office is that there would no longer be need to use a large part of the Capitol as a warehouse for such inflammable materials. The recent fires which seriously threatened to destroy the Capitol and the Executive Office revealed again the grave danger that lurks in the accumulation of old documents in places unsuited for such storage.

Therefore, the Public Printer suggests that it is timely to consider the erection of another building at the Government Printing Office for the storage and mailing of congressional documents, as well as to provide a fireproof warehouse for its own great stores of documents, papers, and other valuable materials.

If Congress desires, it could continue control over its documents stored in the Government Printing Office and designate the personnel required for that work in the same manner as the Senate and House supervise their respective folding rooms. Separate and exclusive space could be assigned the documents for Senators and Members with all the safeguards and service of the present folding rooms at the Capitol.

HARDING HALL

An important building activity of the Government Printing Office during the past year was the reconstruction of Harding Hall on the eighth floor of the main building. The large auditorium for the use of employees and the printing industry was completed for formal dedication on May 23, 1930, when appropriate exercises were held in the hall, both afternoon and evening. Each program was attended by 1,800 employees, who expressed their appreciation with a profusion of beautiful flowers which filled the commodious stage and overflowed on each side of the proscenium arch.

DISTINGUISHED GUESTS AT DEDICATION

The guests included many distinguished officials in Government, labor, and commercial organizations. For the afternoon program, the address was delivered by Maj. George L. Berry, president of the International Printing Pressmen and Assistants' Union of North America, and the invocation was offered by Rev. ZēBarney T. Phillips, D. D., Chaplain of the United States Senate.

The guest speaker for the evening program was Mr. Charles P. Howard, president of the International Typographical Union, and the invocation on that occasion was offered by Rev. Francis J. Hurney, pastor of the Immaculate Conception Catholic Church of Washington, D. C.

Music on both occasions was furnished by the United States Marine Band Orchestra through the generosity of Major General Commandant Neville of the Marine Corps.

In conducting the exercises, the Public Printer pronounced the official dedication of the hall in the following words:

By virtue of the authority vested in me as Public Printer, I hereby christen this beautiful auditorium "Harding Hall" in honor of our first printer President, and formally dedicate it to the service and enjoyment of the employees of the Government Printing Office and the art preservative of all the arts—"Printing, the Mother of Progress."

GREETINGS FROM PRESIDENT HOOVER

Many letters of commendation were received from invited guests who were unable to attend the exercises, kindly expressing their approval of the purpose for which the auditorium was dedicated.

The honor of the following message from the President of the United States, under date of May 19, 1930, was highly appreciated:

THE WHITE HOUSE,
Washington, May 19, 1930.

MR. GEORGE H. CARTER,
Public Printer, Washington, D. C.

MY DEAR MR. CARTER: I thank you and the employees of the Government Printing Office most cordially for your kind invitation to the dedication of your new auditorium.

I would like very much to accept, but the pressure of duties makes it impossible for me to take on another engagement at any time in the near future. Please extend my greetings to those present at the dedication and my congratulations upon this new facility which will add so much to the interest and attractiveness of the Government Printing Office.

Yours faithfully,

HERBERT HOOVER.

MESSAGE FROM AMERICAN LABOR CHIEF

The president of the American Federation of Labor, Mr. William Green, also sent the following greetings to the officials and the employees of the Government Printing Office, who were greatly pleased by his cordial interest in the occasion:

Most sincerely I regret my inability to be present at the happy event of the dedication of the new Harding Hall. We all rejoice that a fitting assembly room has been provided for those who operate the largest printing plant in the world.

It is appropriate that the Government of the United States should be a model employer. Labor takes pride, therefore, in the good conditions that prevail in our Federal printing industry. The benefits of these good conditions are reflected in the efficient work and the spirit of good will that characterize the activities of your huge printing plant.

It is important that the Government printing plant should be efficient, for it serves the needs of all branches of the Government. The good conditions that prevail make it possible for the employees to feel a real partnership in Government printing work. Without this spirit the problem of supplying the varied needs of different Government divisions would be much more expensive for taxpayers.

The officials and employees of the Government Printing Office are to be congratulated upon the high quality of their work and the splendid conditions under which they work. As in the past the cooperation of the American Federation of Labor is pledged to support of better and higher standards for your office.

LETTER FROM HEAD OF THE TYPOTHETÆ

Another letter which was also heartily applauded by the audience came from the president of the United Typothetæ of America, Mr. George R. Keller, of Detroit, Mich., who thus addressed the Public Printer:

I have received your invitation to be present at the dedication of Harding Hall in the Government Printing Office on Friday, May 23. I regret exceedingly that I can not be with you.

I know that the building of this hall has been a matter very close to your heart for several years and you are to be congratulated on the consummation.

I wish that I could be there to tell those who will be present in what high regard you are held by the employing printers throughout the world. The presence of two outstanding men in union circles testifies as to the regard held for you by your employees.

Extending my sincere congratulations, I am, sincerely yours.

LIST OF GUESTS AT THE DEDICATION

Among the invited guests who honored the dedication with their presence at either one or both of the exercises were—

Hon. Edgar R. Kiess, vice chairman Joint Committee on Printing of Congress.

Hon. Edward M. Beers, chairman Committee on Printing, House of Representatives.

Hon. William F. Kopp, of Iowa, Member of Congress.

Hon. Alvin W. Hall, Director Bureau of Engraving and Printing, Treasury Department.

Dr. Herbert Putnam, Librarian of Congress.

Rev. ZēBarney T. Phillips, D. D., Chaplain of the United States Senate.

Rev. Father Francis J. Hurney, pastor of the Immaculate Conception Church, Washington, D. C.

Maj. George L. Berry, president International Printing Pressmen and Assistants' Union of North America.

Charles P. Howard, president International Typographical Union.

Frank Morrison, secretary American Federation of Labor.

John B. Haggerty, president International Association of Bookbinders.
Felix J. Belair, secretary-treasurer International Association of Bookbinders.
Luther C. Steward, president National Federation of Federal Employees.
Miss Gertrude McNally, secretary National Federation of Federal Employees.
L. M. Augustine, secretary International Association of Printing House Craftsmen.

Edwin M. McGrady, legislative representative American Federation of Labor.
George B. Christian, Washington, D. C., secretary to the late President Harding.

Maj. Thomas Defrees, Washington, D. C., son of the first Superintendent of the Government Printing Office, 1861.

Norman Dodge, president Mergenthaler Linotype Co., New York City.

T. Frank Morgan, vice president Lanston Monotype Machine Co., Philadelphia, Pa.

Thomas R. Jones, vice president and general manager Harris-Seybold-Potter Co., Cleveland, Ohio.

Frederic W. Goudy, type designer, Marlborough-on-the-Hudson, N. Y.

Harry Hillman, editor United Typothetæ of America Bulletin.

William M. Leath, president Columbia Typographical Union, No. 101, Washington, D. C.

Fred S. Walker, secretary Typographical Union, No. 101, Washington, D. C.

Hyter H. Ruggles, president Printing Pressmen's Union, No. 1, Washington, D. C.

Carl Van White, secretary Printing Pressmen's Union, No. 1, Washington, D. C.

Joseph H. Van Overmeer, president Bookbinders' Union, Local No. 4, Washington, D. C.

Virgil V. Hutchinson, secretary Bookbinders' Union, Local No. 4, Washington, D. C.

Charles F. Markey, president Electrotypers' Union, No. 17, Washington, D. C.

John A. McLean, secretary Electrotypers' Union, No. 17, Washington, D. C.

Mrs. Nora A. Bechtel, president Washington Pressfeeders' Union, No. 1, Washington, D. C.

Miss Matilda F. Koester, secretary Washington Pressfeeders' Union, No. 1, Washington, D. C.

Bert E. Bair, president Washington Club of Printing House Craftsmen.

L. K. Johnson, secretary Washington Club of Printing House Craftsmen.

A HISTORY OF HARDING HALL

An artistic brochure, containing the programs, history of the hall, and pictures of the auditorium and the first printer President, in whose honor it was named, was printed as a souvenir of the notable event and presented to all the participants. It seems fitting here to reprint and record this interesting history of the successful effort that has been made to better the conditions of employment in the Government Printing Office during recent years, and therefore the following history of Harding Hall is quoted from the dedication program:

Harding Hall, named in honor of the first printer President, is the development of an ideal which has inspired progressive improvements in the Government Printing Office during recent years.

This beautiful auditorium and the adjoining cafeteria, electric kitchens, recreation rooms, and apprentice school were made possible by utilizing a huge garret that for many years had been the playroom for hordes of rats amid heaps of rubbish.

With no other place then available, employees had to eat cold lunches in the workrooms or rush out in all kinds of weather to near-by restaurants for their noon and midnight meals. The largest printing office in the world had no place for the recreation or assemblage of employees other than corridors and stairways. Yet with all these handicaps the employees made notable effort from time to time to express their patriotism and good fellowship in simple exercises which could be attended only by standing in the hallways. A dilapidated piano and later a primitive phonograph furnished the music for the impromptu programs.

Those rare occasions were followed by the munching of lunches in the workrooms, augmented at times by pies and coffee brought in by various peddlers. Workbenches had to be used as lunch tables, and when the hasty bites were ended with the call of "time" the remaining food was pushed aside for the enjoyment of the rats and roaches that ran rampant throughout the office. Such were the "good old days," typical not only of the Government Printing Office but also of nearly every other industrial establishment at that time.

PROJECT OF THE PRESENT PUBLIC PRINTER

Immediately on assuming office in 1921 the present Public Printer, the Hon. George H. Carter, realized the urgent need for a change in such wretched conditions. Under his direction Maj. W. R. Metz, then Superintendent of Buildings, prepared plans for converting the garret, which extended over the entire main building, into a full story, thus making available approximately 45,000 square feet of unused floor space for the cafeteria, assembly hall, recreation rooms, apprentice school, and photo-engraving section.

The massive concrete roof was raised—a remarkable feat of engineering; new walls were built, with adequate windows, and the floor reinforced to support the additional load. Broad stairways were installed, and the new top story was made accessible by the extension of several elevators. Even the roof was utilized for the enjoyment of employees, who can now rest there in the open air or under a long canopy and view the city and the surrounding country.

All of these improvements were made with the unanimous approval of the Joint Committee on Printing, to whom the employees of the Government Printing Office are sincerely grateful for the privileges that have been thus provided so liberally for their comfort and enjoyment.

The new cafeteria began to function on January 23, 1922, and has been in continuous and successful operation ever since, serving more than 2,600 meals every work day and night to the employees of this office. Last year, 814,895 orders for food were served, the gross receipts amounting to \$232,212.67.

SPONSORED BY ASSOCIATION OF EMPLOYEES

The cafeteria and all the recreational activities of the Government Printing Office are sponsored and operated by the Government Printing Office Cafeteria and Recreation Association, a voluntary organization of employees which was formed at the suggestion of the Public Printer. The association maintains a staff of about 60 employees, all the wages of whom are paid from its own receipts, which also provide for the purchase of necessary foodstuffs and the replacement of equipment originally installed by the Government.

In addition, the Cafeteria Association has earned sufficient funds to finance numerous entertainments, including an annual Christmas treat for more than 2,000 children of employees and an annual picnic at a near-by summer resort. The association also controls the funds of the baseball and bowling teams and the orchestra, composed of employees. Recently it has contributed liberally to the purchase of furnishings for the new Harding Hall, including all the draperies and stage equipment.

Numerous delightful entertainments and meetings were held in the old Harding Hall, which was opened for its first informal program on Christmas Eve of 1921. Since then many distinguished persons have delivered addresses at the annual Memorial, Fourth of July, Armistice, and Thanksgiving Day exercises. Notable among other gatherings in the old hall were the reception attended by more than 100 Members of Congress in 1922, the entertainment of 1,600 members and guests of the United Typothetæ of America and the Employing Bookbinders of America at their annual meeting in 1923, the concert given by the Hamilton Club Chorus of Chicago at the 1925 inauguration, the luncheon and entertainment tendered the First Pan American Congress of Journalists in 1926, the banquets and entertainments of the Fourth District of the United Typothetæ of America, the Potomac District Clubs of the International Association of Printing House Craftsmen, and the Association of Government Buildings Superintendents.

The old hall was also used for the permanent displays by the Government Printing Office and exhibitions by the American Institute of Graphic Arts and the division of graphic arts of the Smithsonian Institution; all of which attracted many visitors and proved of much interest to employees.

OLD HALL FOUND TO BE INADEQUATE

Although the old hall had a seating capacity of 1,200 it was found to be inadequate for the 4,500 employees of the Government Printing Office, for whom double exercises had to be held on every special occasion like Memorial and Thanksgiving Days. Even then only part of the force could be accommodated. The hall, with its low ceiling, exposed girders, and center columns, also had very poor acoustics and ventilation, which prevented proper enjoyment of the purpose for which it was constructed. The little stage in a corner of the hall likewise proved wholly inadequate.

Notwithstanding all these handicaps, the old hall was a decided improvement over former conditions, when none of the enjoyments which it afforded were possible in the Government Printing Office. During eight years of use the hall proved of such benefit to employees and service to the printing industry that its success seemed to justify the construction of an auditorium which would more adequately provide for the needs of the office and offer better facilities to others interested in the graphic arts. Accordingly, the Public Printer submitted a proposal to the Joint Committee on Printing for the reconstruction of Harding Hall, and the plan was heartily approved on June 13, 1929.

The demolition of the old hall, largely a work of removing the concrete roof, was begun in June, 1929, and the reconstruction has just been completed. The structural work of the new roof and walls was done by contract, as was the ornamental plastering and painting. All the other work has been completed by the Construction and Maintenance Division of the Government Printing Office under the able direction of its Superintendent, Mr. Alfred E. Hanson.

SEATS FOR 1,800 IN THE NEW HALL

The new auditorium occupies practically the same space as the old hall, with a width of 68 feet, but the length has been increased to 112 feet. The total seating capacity is now approximately 1,800. The chairs on the main floor are removable, so that the hall may be used for other purposes. A balcony has been added at the rear, with 286 fixed seats and a fireproof projection room containing two motion-picture machines and a powerful spot light.

The ceiling, which has a height of 20 feet, is formed of acoustical plaster, paneled and studded with bronzed grilles of the Adams period for the ventilating and indirect lighting systems. The center light grille is surrounded by a beautifully bronzed sunburst. Above the ceiling is an attic of sufficient size to provide space for the elaborate heating and ventilating systems, which can furnish a complete change of warm or cool air every 10 minutes.

NEW AUDITORIUM IS FULLY FIREPROOFED

The fireproof roof is supported by 70-foot steel trusses, which eliminate the center columns that interfered so seriously with the view and acoustics in the old hall. Every precaution has been taken to make the auditorium safe. Adequate exits, including one from the balcony to the roof, have been provided.

The stage is one of the most attractive and interesting features of the new hall. It has an opening of approximately 30 feet, a depth of 18 feet, and a height to the proscenium arch of 14 feet, affording suitable space for entertainment purposes. The main curtain is of handsome gold silk velour. The olio, or second curtain, and the tormentors are gray, of the same material. The cyclorama is reversible—one side is gray, shot with blue, and the other black. The valance and borders are of the same material as the curtains, all of which are fireproofed. Foot and border lights of the latest type can produce any desired combinations of three colors—red, white, and blue.

At one side of the stage is located the large switchboard from which every light on the stage and in the auditorium, 1,429 in all, can be operated for the dimming and blending of colors. This modern board and other equipment were obtained by courtesy of the Secretary of the Treasury from the President Theater, now being demolished for a Government building site. At the other side of the stage are two well-equipped dressing rooms, the lower one for women and the upper one for men.

For formal programs the stage has been furnished with an imposing desk for the use of speakers. The carving, a reproduction of the official crest of the Government Printing Office, is a work of the highest art, the product of Mr. Otto H. Gaede, of the Government Printing Office carpenter shop.

The equipment and arrangement of the stage were under the supervision of Mr. William D. Skeen, whose ability in theatrical matters is well known and highly appreciated.

A small orchestra pit has been provided for use in connection with stage presentations. Back of the beautiful semicircular grilles on each side of the stage are elaborate sets of musical bells and chimes, which can be played by operating a keyboard in the orchestra pit or on the stage. A fine upright piano and a concert grand piano are also part of the musical features, which regularly include an excellent orchestra consisting of 24 talented employees.

ARTISTIC ORNAMENTATION OF THE HALL

The walls of the main auditorium are ornamented by stately bronzed pilasters with capitals and decorations of the Adams period. Between the pilasters on one side are 10 cathedral-type windows reaching almost to the ceiling and

draped full length with gold silk velour curtains. On the other side of the hall the pilasters are separated by the imposing entrance doors and attractive wall panels, producing altogether a most pleasing and restful effect. Above the pilasters are coves which extend the full length of each side of the hall and across the front, containing approximately 1,000 electric lights which can be blended in various colors or dimmed at the will of the switchboard operator. Paneled wainscoting and grilles conceal the radiators below the windows.

Effective decoration has also been made on the broad fascia of the balcony with the artistic use of ornamental urns and festoons. An excellent plaque of President Harding, modeled under the direction of Mr. Edgarde Simone, the well-known Italian sculptor, forms the appropriate centerpiece of the balcony decorations. The balcony is supported at the center by two mirrored columns. Underneath at the rear is a charming niche with a scored mirror background in which is set a handsome terra-cotta drinking fountain supported by statuettes in bronze.

It is impossible to portray the beauty of the architectural treatment of the new hall with its wonderful ornamentation of the Adams period. Harmonious shades of bronze and gold prevail everywhere from the floor to the ceiling and are carried out in the draperies, rugs, and other decorations. The color scheme was the gracious suggestion of Mr. S. L. Rothafel, of the Roxy Theater, New York City, and was applied under the personal supervision of the Public Printer.

Credit for working out the complete ornamental design for the plastering and woodwork is due to Mr. J. A. Weber, architect, who was kindly assigned to this intricate task by Mr. G. O. Von Nerta, technical officer of the Supervising Architect's Office in the Treasury Department. Mr. Weber gave much personal attention to the proper execution of his designs, for which he is entitled to the highest praise.

Mr. Victor Figallo, of Lenzner & Figallo, sculptors, modeled the plaster decorations in a most artistic manner. The plastering was admirably well done by the Kraft-Murphy Co., also of Washington.

The decorative painting was executed under the personal supervision of Mr. Joseph Brunori, who has every reason to feel proud of his beautiful accomplishment.

The excellent woodwork was made and installed by the carpenter shop of the Government Printing Office under the direction of its skilled chief, Mr. Abraam B. Batton, who also assisted in general supervision.

PRAISE FOR EXCELLENT WORKMANSHIP

The entire personnel of the Construction and Maintenance Division rendered skillful and whole-hearted service in various other ways, and all are to be congratulated upon their splendid workmanship. In addition to those already mentioned special credit is due to the following for the good work done under their direction: Capt. Edward H. Brian and Mr. George B. Clum, of the electrical section; Mr. Ovilup H. George, of the pipe and sheet-metal section, which installed all the heating, ventilating, and plumbing systems; Mr. Michael J. McInerney, of the machine-shop section; Mr. Daniel W. Bruce and Mr. Joseph L. May, for the general helpfulness of their sections.

In all the purchases and contracts for the work Mr. Ernest E. Emerson, Purchasing Agent of the Government Printing Office, and his division rendered excellent service.

Praise is also to be accorded Mr. Edward G. Molander, formerly assistant structural engineer of the Government Printing Office and now of the construction division of the Veterans' Bureau, for preparing the preliminary plans for

the remodeling of the hall; to Mr. Charles W. Barber, structural engineer of the Supervising Architect's Office, Treasury Department, for careful and competent checking of the structural design; and to Mr. Edward F. Webb, associate structural engineer of the Government Printing Office, for completing the plans, for assisting in the general supervision of contract construction work, and for numerous special features of the hall. The general contract for the demolition and new construction, including the steel, masonry, and concrete work, was executed by Mr. H. H. Herfurth, jr.

Thanks are likewise due to Dr. Paul R. Heyl and Mr. V. L. Chrisler, of the sound section of the Bureau of Standards, for acoustical analysis and recommendations; to Mr. William Y. Brady, construction engineer, Supervising Architect's Office, Treasury Department, for construction advice; to Mr. F. R. Zinn, of the United States Gypsum Co., for supervision of the acoustical plaster work; to Mr. H. V. Russell, of Barber & Ross, for the steel fabrication; to Mr. John A. Hendricks, of Havre de Grace, Md., for the steel erection; to Mr. T. J. Vandorn, of David Lupton's Sons Co., for advice concerning the cathedral windows; to Mr. K. K. Fritz, of W. B. Moses & Sons, for supervision and advice in regard to draperies; to Mr. Warren Ferris, printing designer of the Government Printing Office, for the monogram design on the proscenium cartouche; and to Mr. Nat Glasser, of the Metropolitan Theater, Mr. Albert Waters, of the Savoy Theater, and Mr. W. H. Colmer and associates, of the Earle Theater, for special advice and courtesies.

As a result of such efficient planning, expert advice, competent construction, and careful supervision, Harding Hall has been completed for formal dedication to the art preservative of all the arts. May its beauty and charm of to-day always endure—a glorious tribute to the first printer President of the United States.

VARIOUS USES MADE OF THE HALL

Since the dedication exercises on May 23, 1930, Harding Hall has been used on various occasions befitting the purposes of its construction. The first memorial service in the new auditorium was held on May 29, 1930, when the speaker was Gen. Charles P. Summerall, Chief of Staff, United States Army, and the music was furnished by the United States Army Band Orchestra.

Armistice Day was observed by a large audience, which enjoyed an address by Judge Robert E. Mattingly of the Washington Municipal Court, followed by an entertainment under the auspices of the Government Printing Office Units of the United Veterans of American Wars.

For the Thanksgiving service of November 26, 1930, the auditorium was filled with 1,800 employees, who greatly appreciated an address by Rev. Joseph Richard Sizoo, D. D., pastor of the New York Avenue Presbyterian Church, Washington, D. C. The Thanksgiving audience also enjoyed the initial appearance of the Government Printing Office chorus of 40 voices, under the direction of Mr. Gerald L. Whelan, accompanied by the Government Printing Office orchestra of 30 members, under the leadership of Mr. William C. Buckingham.

The orchestra also entertains employees with a concert in Harding Hall every Friday noon during the lunch period.

Other uses of Harding Hall in recent months include banquets and entertainments by the Association of Government Buildings Superintendents, the Washington Club of Printing House Craftsmen, and the Amateur Championship Baseball Series of the District of Columbia; the graduation exercises of the Government Printing Office school of apprentices on June 4, 1930; address to printers and apprentices by Mr. Frederick W. Goudy, a noted type designer, on June 5, 1930; educational motion pictures; three evenings of entertainment and dancing provided by the Cafeteria and Recreation Association for the employees of the Government Printing Office; and assemblies in honor of several retiring employees and to bid bon voyage to Miss Kathryn M. McCaffrey, of the Bindery Division, who was chosen by a Washington committee as the "typical Washington girl" for a trip to Paris under the auspices of the Hearst newspapers.

ENTERTAINMENT OF NEWSPAPER BOYS

On December 23, 1930, the Government Printing Office enjoyed a visit from 200 newspaper boys of America making their first annual patriotic pilgrimage to the National Capital. The visit concluded with a banquet in Harding Hall under the auspices of the American Newspaper Boys Association and the Washington Times and Herald.

The year's activities in Harding Hall came to a happy conclusion on the afternoons of December 29 and 30, 1930, with the annual Christmas entertainments and treats for 2,000 children of employees, who greatly enjoyed the generous hospitality of the Cafeteria and Recreation Association on those merry occasions.

It is the earnest hope of the Public Printer that Harding Hall will be of continuing benefit and enjoyment to the employees of the Government Printing Office and the entire printing industry and that their organizations may avail themselves of its privileges throughout the coming years with all the enthusiasm that so auspiciously marked the dedication of this attractive auditorium. Already invitations have been extended to the International Association of Printing House Craftsmen and the International Typographical Union to hold their meetings here during the celebration of the George Washington Bicentennial Anniversary in 1932. A similar welcome will be accorded to any other organizations of the graphic arts whenever they may meet in Washington.

APPRECIATION BY PRINTING HOUSE CRAFTSMEN

In appreciation of the Public Printer's dedication of Harding Hall to the printing industry, the Washington Club of Printing House

Craftsmen adopted the following resolution at its regular meeting on June 9, 1930:

Whereas the Hon. George Henry Carter, Public Printer of the United States of America, and esteemed member of the Washington Club of Printing House Craftsmen, has on numerous occasions in the past fostered and effected mechanical and humanitarian benefits to the printing industry, and

Whereas the said George Henry Carter has recently dedicated beautiful Harding Hall of the Government Printing Office to the employees of that department and to the art preservative of all arts, for the service, advancement, and enjoyment of the industry: Therefore be it

Resolved, That the congratulations, felicitations, and sincere thanks of this club be, and they are hereby, extended to the Hon. George Henry Carter as an outstanding exemplar of the motto of this organization "Share your knowledge."

The general committee of the Government Printing Office Cafeteria and Recreation Association also gave a vote of thanks to the Public Printer at its meeting on October 20, 1930, for providing Harding Hall for the use of the employees of the Printing Office.

COMMENDATORY LETTERS FROM EMPLOYEES

Appreciation of the improvements that have been made for their comfort, health, and enjoyment has also been expressed in many letters that the Public Printer has received during the year from present and former employees. The following extracts from a few of the more recent letters are typical of the numerous commendatory messages that individual employees have written of their own accord:

I served in the office 37 years and can truthfully say that you have wonderfully improved the office and shown more kindness and consideration for the employees than any preceding Public Printer, for which I thank you.

* * *

I gratefully acknowledge the many years of employment given me—nearly 33—and regret that the span of human life does not permit me to continue that number of years longer, especially under the greatly improved conditions that now exist, most of which have come since you have been Public Printer.

* * *

I also want to say that the conditions under which we have been working since the beginning of your administration have been such as to make the eight hours we spend in the office a pleasure.

* * *

Assuring you of my hearty good will and that I will always have a kindly feeling toward all those with whom I have been associated in the office and that I will have nothing but praise for the Government Printing Office at all times, I have the honor to remain.

* * *

In closing my connection with the Government Printing Office I wish to thank you and those under whom I have served for the many courtesies and considera-

tions shown me, and to wish your administration of the Government Printing Office the same success it has enjoyed in the past under your able leadership.

* * *

You are to be congratulated for all the wonderful things you have accomplished.

* * *

I congratulate you on your successful administration and know the employees appreciate the numerous betterments of conditions in the office.

* * *

I wish to express my appreciation of the fair and impartial treatment I have received at all times.

* * *

On this glad Thanksgiving Day, when everyone is filled with the holiday spirit, we are apt to forget the great blessings we have received during the year. There is always one outstanding thing or event that overshadows all others in our lives, and the one that I am most thankful for to the Giver of all good things is that He has given us one who has added one blessing after another to the employees of the office, not the least of which are three raises of wages, enabling us to live better and have more comforts than kings enjoyed a few hundred years ago.

* * *

August 1, 1882, I began work as an apprentice at the Government Printing Office at North Capitol and H Streets. The Government Printing Office was a comparatively small institution then, employing only a few hundred people. The number varied, as there were frequent discharges, furloughs, etc.

Since then I have been employed in the office at various times under various administrations and have seen the establishment gradually expand until it has reached its present stupendous proportions.

I have witnessed the installment of intricate and wonderful mechanical equipment, which has eventually enabled the present numerous and highly efficient employees to produce a volume of finished product little dreamed of in the days of the eighties.

I think we all should feel a sense of pride in the fact that we have been permitted to participate in the operation of such a grand institution and should strive to keep up the useful work that it is engaged in and thus contribute to the success of Uncle Sam.

IMPROVEMENTS IN THE CAFETERIA

For the further benefit of employees, extensive improvements have been under way for several months in the fireproofing and renovation of the cafeteria adjoining Harding Hall. The capable management of the cafeteria by the employees' association for the last nine years has given assurance of its continued success and justified more permanent improvements which have been approved by the Joint Committee on Printing of Congress.

Accordingly, all the wooden walls and fixtures have been replaced with brick and fireproof materials, the kitchen walls lined to the ceiling with white glazed tiles, and a 4-foot wainscoting of white tiles added to the walls and columns in the main dining hall. Large elec-

tric refrigerators of white tile construction have been installed for the better preservation of food supplies.

A fifth serving counter will provide more prompt accommodation for the 2,200 employees who patronize the cafeteria at noon every working day. Meals are also served at other periods through the day and night, including breakfast and dinner for several hundred employees.

The cafeteria has an average of 3,600 patrons every 24 hours and has been a financial success for the employees' association as well as a beneficial service to the Government ever since its establishment by the Public Printer in 1922. The gross receipts of the Cafeteria and Recreation Association for its fiscal year ended October 20, 1930, amounted to \$266,292.20, which netted a fair surplus for safe financing, although the cafeteria was operated on substantially a cost basis.

NEW RECREATION ROOM FOR EMPLOYEES

The increasing popularity of the cafeteria and auditorium has prompted the Public Printer to provide a recreation hall for the use of employees during their leisure time. A space of 3,100 square feet on the eighth floor of the main building was made available for that purpose by the removal of the Apprentice School to the new extension. This room, which connects with the cafeteria, Harding Hall, and the bowling alleys, will be suitably furnished as a rest and recreation place for employees. It can also be used as an exhibition hall and conference room from time to time as occasion may require. In recognition of its suggestion by Deputy Public Printer Greene, the room has been christened "The Green Room," and its color scheme will be in harmony with its name.

Reallocation of the space for this new service to employees also gave additional room to the bowling alley section, where two more alleys have been installed at their own expense, thus providing six alleys, which are operated and maintained by the association and greatly enjoyed by employees. Various sections of the day force have organized a bowling league, which holds its contests in the evening, and the night force has similar league games in the daytime. During the year a total of 65,387 games were played on the four original alleys.

TRIBUTE TO THE LATE HON. EDGAR R. KIESS

Reviewing the comforts that have been enjoyed by employees of the Government Printing Office through higher wages, better working conditions, and greater privileges in recent years, it seems fitting to pay tribute in this report to a good and loyal friend, the late Hon. Edgar R. Kiess, of Pennsylvania, whose steadfast and whole-hearted

assistance during the 17 years of his service as a member and vice chairman of the Joint Committee on Printing made possible many of these accomplishments.

In announcing the death of Vice Chairman Kiess, the Public Printer posted the following statement on all the bulletin boards in the Government Printing Office, July 21, 1930:

To the Officers and Employees of the Government Printing Office:

With heartfelt sorrow I regret to announce the death of Hon. Edgar R. Kiess, vice chairman of the Joint Committee on Printing, which occurred at Eagles Mere, Pa., on Sunday, July 20.

Mr. Kiess was a most faithful and helpful friend of the Government Printing Office. During his distinguished service on the printing committees of Congress he was enthusiastic and whole-hearted in always promoting the best interests of this office. We are especially indebted to him for the Kiess Wage Act, which has been so beneficial to the employees of the Government Printing Office. That legislation alone will stand as an eternal monument to him. His deep interest in the welfare of the Government Printing Office was again manifested recently by a special trip to Washington to participate as acting chairman of the Joint Committee on Printing in the dedication of Harding Hall. Mr. Kiess's kindly greetings and assurances on that occasion have now become a fond farewell and an inspiration for the future.

As an expression of our sorrow, the flag on the Government Printing Office will be at half-mast until after the funeral; and, as a further mark of respect, it is suggested that silence prevail throughout the office for a period of five minutes during the funeral services, beginning at 11 o'clock, Wednesday morning, July 23.

May God bless and preserve the memory of our dear friend, Edgar R. Kiess.

GEORGE H. CARTER,
Public Printer.

Following this sad message, a delegation of officials and employees attended the funeral services at Williamsport, Pa., bearing beautiful floral tributes from their fellow workers.

EMPLOYEES EXPRESS THEIR SORROW

As a further expression of their sorrow, the employees of the Government Printing Office adopted and had suitably engrossed and bound these resolutions in appreciation of Mr. Kiess's friendship:

Whereas the employees of the United States Government Printing Office have learned with deep sorrow of the death of their true friend, Hon. Edgar Raymond Kiess, late a Representative in the Congress of the United States from the sixteenth congressional district of Pennsylvania; and

Whereas Representative Kiess, as chairman of the House Committee on Printing and as vice chairman of the Joint Committee on Printing, rendered valuable aid to the employees of the Government Printing Office in many ways, particularly in securing passage of the Kiess Wage Act, which has resulted in improving the condition of every employee of the Government Printing Office; and

Whereas we realize the loss of a staunch supporter who was always most earnest in his efforts for the welfare of all: Therefore be it

Resolved, That we, the employees of the Government Printing Office, being deeply moved by his untimely demise, extend to the family of our late benefactor sincere sympathy in their hour of bereavement; and be it further

Resolved, That these resolutions be printed and a copy forwarded to the family of our deceased friend.

PRODUCTION FOR THE YEAR

As to the productive activities of the office during the fiscal year ended June 30, 1930, it is gratifying to report that the output broke all records, surpassing the banner fiscal year of 1929, which in turn had excelled the war-peak fiscal year, 1918-19. The total computed product for the fiscal year 1930 amounted to \$14,096,520.25, an increase of \$1,381,189.45, or 11 per cent over the computed product for the preceding fiscal year, based on substantially the same scale of charges. The estimated value of uncompleted work on hand July 1, 1930, which was not charged to the departments, was approximately \$2,270,000, the normal carry-over from one year to another.

The computed charges for the year exceeded the production costs, including every item of expenditures, by $1\frac{3}{4}$ per cent. Inasmuch as the Public Printer is restricted by law not to create a deficit nor to make a profit on the work of the Government Printing Office, the narrow margin of $1\frac{3}{4}$ per cent is as near a balance of receipts and expenditures as is possible in a business exceeding \$14,000,000 annually.

The unobligated balance of the funds available on June 30, 1930, amounted to \$125,134.15, which can no longer be used by the Public Printer except in minor readjustments of outstanding orders. Included in the unexpended balance is the sum of \$63,000 in fulfillment of a reserve pledge to the Bureau of the Budget.

In addition to the unexpended balance, the Public Printer deposited in the Treasury to the credit of miscellaneous receipts for the fiscal year 1930 the sum of \$412,874.23 from the sale of public documents and waste materials, a gain of \$242,484.39 from these resources over the preceding year.

UNEXPENDED BALANCES FOR 10 YEARS

The total returns that the Public Printer has made to the Treasury from unexpended balances and miscellaneous receipts for the 10 fiscal years 1921-1930, inclusive, amount to \$10,615,764.83, a net saving of this entire sum for the Government.

The vast expenditures for the fiscal year 1930 were reviewed by the Comptroller General and passed his audit with a disallowance of only \$5.81 for an error which was corrected without loss to the Government. This remarkably accurate record in accounting included the handling of approximately 106,000 semimonthly pay-roll

accounts, totaling \$9,683,066.41, and 7,774 purchase orders, amounting to \$4,700,000.

Substantial gains were made during the fiscal year 1930 in all the operations of the productive divisions—printing, platemaking, binding, and presswork—over their output for the preceding year.

The total number of ems of type set in 1930 was 2,473,567,100, an increase of 246,826,100, or 11 per cent more than in 1929. Linotype operators increased their average number of ems set per hour from 4,992 to 5,118, and monotype keyboard operators from 7,148 to 7,214.

The Platemaking Division increased its output of electrotype and stereotype plates to a total of 12,448,269 square inches, or 1,627,818 square inches more than were made in 1929.

The Presswork Division produced 586,530,941 actual impressions, an increase of 74,092,171 over the printed sheets for the fiscal year 1929. By combination or repetition of jobs on the same sheet, the number of chargeable impressions reached a total of 2,364,948,413, an increase of 139,627,583 for the fiscal year 1930. During the year 173,742 forms were sent to press, an increase of 20,315, or 13 per cent more than for 1929.

BIG INCREASE IN BINDERY OPERATIONS

The various bindery operations show increases of from 4 to 60 per cent, including 452,673,407 sheets machine folded, an increase of 74,312,353 sheets; 159,676,789 signatures gathered, an increase of 5,486,712 signatures; 51,738,999 copies wire stitched, an increase of 6,721,243 copies; 56,041,685 books and pamphlets trimmed, an increase of 11,048,795 copies; 66,015,602 signatures sewed, an increase of 7,414,887 signatures; 2,143,025 books cased in (cloth covered), an increase of 474,321 books; 3,424,186 book covers stamped, an increase of 681,102 stamping impressions; 12,638,296 books and pamphlets (paper covered), an increase of 2,090,792 copies; 34,997,757 sheets machine ruled, an increase of 8,128,315 sheets; 161,098,129 copies punched and drilled, an increase of 12,104,194 copies; and 3,972,821 tablets, an increase of 399,770 tablets.

A total of 3,903,932,177 copies of all kinds of printed matter was produced in the fiscal year 1930, an increase of 501,800,591 copies over the output for 1929. The largest item of printing included blanks, notices, schedules, and cards, which totaled 3,652,174,274 copies for the year, an increase of 485,073,029.

Printed letterheads, noteheads, and envelopes reached a total of 118,052,666 copies, 3,422,849 more than in 1929. The number of embossed letterheads, noteheads, and envelopes increased 861,689, with a total of 1,618,850 for the year, which more than doubled the amount of embossing done in 1929.

The large increase of embossed stationery was due to more extensive departmental use authorized by the Permanent Conference on Printing and approved by the Director of the Bureau of the Budget during the year.

Members of Congress personally pay for whatever embossed stationery they order, amounting to only \$694.35 for the fiscal year 1930.

VAST NUMBER OF PUBLICATIONS

Books and pamphlets, exclusive of the Congressional Record, bills, and patent publications, were printed in the fiscal year 1930 to the number of 106,117,777 copies, an increase of 6,846,845 over the output for 1929. These publications contained 1,943,151 type pages, a decrease of 41,213 from the number of pages printed in the preceding year. The number of bound publications also fell off slightly, with a total of 1,014,349 copies, a decrease of 51,467.

Annual reports for the fiscal year 1929, which were printed during the fiscal year 1930, contained 20,877 type pages, a reduction of 38,063 from the total number of pages in the reports for the fiscal year 1920. The total cost of printing the annual reports for the fiscal year 1929 was \$233,902.99, or \$126,533.66 less than was expended for printing the 1920 reports and \$23,271.89 more than for the 1928 reports. The total number of copies of the 1929 reports was 469,829, or 11,879 less than were printed of the 1920 reports and 32,832 more copies than of the 1928 reports.

The largest annual report for the fiscal year 1929 was, as usual, that of the Chief of Engineers, War Department, which contained 3,209 pages and cost \$29,754.47 for 3,822 copies of the two volumes.

The Annual Report of the Public Printer for the fiscal year 1929 contained 125 pages and cost \$1,087.07 as compared with the 716-page report for 1920, which cost \$7,057.25. The reduction in the Public Printer's report has been due to the elimination of a large number of statistical tables, which, according to law, are now kept on file instead of being printed. The cost of printing the Public Printer's reports for the last 10 fiscal years has thus been reduced \$40,681.19 from the expenditures for that purpose during the 10 fiscal years 1911-1920.

AUTHORS' ALTERATIONS ARE COSTLY

Charges for authors' alterations on printed proofs of their manuscripts amounted to \$216,607.21 for the fiscal year 1930, bringing the total charge for the 10-year period, 1921-1930, up to \$2,042,393.30. The yearly charges for authors' alterations have ranged from \$228,597.30 in 1921 to \$164,567.19 in 1923.

The Department of Commerce leads in the 10-year expenditures for authors' alterations with a total of \$267,733.72. During the

same period, \$246,142.19 was charged to Congress for alterations in the proofs of its publications. The Department of Agriculture ranked third with a total charge of \$178,858.99 for authors' alterations during the 10 years, 1921-1930.

Blank-book production continued to increase, with a total of 3,248,618 books for the fiscal year 1930, or 294,051 more than the output in 1929 and 786,386 more than in 1928.

Three years ago this office began making most of the Government blank books in accordance with decisions of the Joint Committee on Printing and the Comptroller General requiring departments to comply with the law that blank-book work shall be done at the Government Printing Office. This action brought about a radical reduction in the sizes and styles of blank books and stenographers' notebooks.

Of the 19 standard blank books now in use by all branches of the Government service, approximately 500,000 copies were produced by the bindery during the fiscal year 1930. Of stenographers' notebooks, in four standard styles, 300,000 were made. Stock tablets, in 25 sizes, totaled 720,000 for the year.

The annual catalogue of blank books and supplies furnished by this office contains 184 items that are now standardized and kept in stock for departmental use.

ECONOMY IN STANDARD BLANK BOOKS

Considerable economy was effected by producing these standard blank books and tablets in larger quantities and placing them in stock to fill orders from time to time from various establishments of the Government. By utilizing improved machinery and methods for quantity production, the Public Printer was enabled to reduce the cost, better the quality, and render more prompt service than had been possible under the former contract system of procuring blank books.

The supplying of blank paper and envelopes to other departments and establishments of the Government under the act of June 7, 1924, has also developed into a large business, the receipts from which in 1930 amounted to \$622,341.35, including cost of stock and charges for cutting and packing, an increase of \$86,923.46 over the preceding year.

All of the blank paper and envelopes are bought on specifications and contracts approved by the Joint Committee on Printing, and deliveries are inspected at the Government Printing Office the same as all other materials for the public printing and binding. It has been estimated that during the six years in which the Government Printing Office has been supplying blank paper and envelopes in this manner a saving of approximately \$250,000 has been effected, owing to the lower prices obtained by purchases in larger quantities under

contracts awarded by the Joint Committee on Printing. At the same time better and more uniform quality of paper has been obtained.

TABULATING CARD PRINTING INCREASES

Statistical tabulating cards were printed during the fiscal year 1930 to the number of 29,044,500 for all the Government departments and establishments using tabulating machines in Washington except for the General Accounting Office and the Bureau of the Census. Since July 1, 1930, the production has greatly increased and for the six months ending December 31, 1930, reached a total of 23,425,200 cards. The rejections have been comparatively few, due to the satisfactory paper stock which has been furnished.

Six new card presses have recently been installed, making a total of 11 special presses now available for that work. These presses are equipped to print colored stripes on the cards, and several of them have dating and numbering attachments, so that the office is now able to meet any requirement in the printing of cards for tabulating machines. An electrical device has been designed to test the thickness of paper on the slitting machine so as to assure even greater uniformity in the thickness of the cards. A special attachment has also been developed for the detection of spots and perforations, which will likewise aid in the production of more satisfactory cards at all times.

All of the tabulating-card equipment has been moved to a more suitable location in the new extension, where every facility has been provided for the proper handling of this important work.

With the increased facilities and equipment for producing tabulating cards, the Government Printing Office has started to print the General Accounting Office cards, but those for the present census will be obtained from the tabulating machine company as requested by the Director of the Census. During the last year the Public Printer procured by contract approximately 75,000,000 tabulating cards for the General Accounting Office and 380,000,000 for the Bureau of the Census.

COST ACCOUNTING SYSTEM IS ACCURATE

Printing and binding for the fiscal year 1930 required the preparation of 62,303 work jackets containing specifications for paper, type-setting, stereotyping or electrotyping, photo-engraving, presswork, various bindery operations, and delivery of the finished product. A large number of the jackets covered more than one job each; in fact, many single jackets were used to carry on throughout the year such routine work as the printing of thousands of bills, reports, documents, committee hearings, and patent specifications, each of which was really a separate job.

In all, 155,250 separate jobs of printing and binding were produced during the fiscal year 1930, an increase of about 16,000 over the jobs finished in 1929.

There were 3,443 more jackets written than in 1929, and the number on hand June 30, 1930, was 5,243, which was 924 less than the number on hand at the beginning of the fiscal year.

In connection with the writing of the work jackets, 55,033 estimates were prepared for the information of the ordering departments and the guidance of this office.

Bills, however, are computed on a definite scale of prices, based on the actual cost of similar classes of work. The computed bills for 1930 number 78,999, an increase of 3,080 over the preceding year.

The fact that the total computed charges for the year, amounting to approximately \$14,100,000, came within less than 2 per cent of the total expenditures for the same period is a high tribute to the efficiency of the estimators and computers and a definite assurance of the accuracy of the system of cost accounting.

PLANNING AND DESIGNING OF THE WORK

To further improve the planning of work in a more uniform manner and simplify production methods, a separate "lay-out" section was organized in the Planning Division during the past year. The duty of this section is to plan and lay out the more important work before it is forwarded to the mechanical divisions. It is believed that the new procedure will effect worth-while economies in a more systematic use of the proper equipment for a particular job, as well as improve the standard of the work.

Two printing designers have been added to the staff of the Planning Division to aid in the creative motif of the art of printing. Other artists will be employed for this work as the requirements may justify to keep pace with the progress that is being made elsewhere in the graphic arts. Already a number of special title pages and other artistic printing have been designed for use in distinctive publications.

The drive which began on October 14, 1929, to complete work that had been on hand for at least 60 days has attained its goal and the office is now on practically a current working basis. Owing to several unusual circumstances the number of 60-day-old jobs on hand October 14, 1929, had reached a total of 2,133. According to the weekly report for December 29, 1930, by continued and strenuous efforts throughout the year, this overload of work has been reduced to a normal condition, there being only 100 so-called 60-day jobs in the office. Of these jobs 49 were out on proof, reducing the number in the office to 51. It is intended to keep up this prompt service.

MEASURES FOR EXPEDITING THE SERVICE

To assist in expediting the work the Government departments have been required during the year to return proofs within 30 days or else issue another requisition, if the work is to be continued, as a new job. In compliance with this rule 150 requisitions have been canceled up to this time. Of the canceled requisitions, 99 were revived later, but had to take their place in the order of new work.

An extra charge of 50 per cent is made for current work that is done on a "rush" order requiring it to be put ahead of other current jobs and handled in an extraordinary manner. The total extra charges for "rush" jobs in 1930 was only \$38,268.21, indicating that the great volume of work is being completed regularly in sufficient time to meet the needs of the Government service.

The Department of Justice continued to lead in the extra expenditure of \$12,689.44 for the "rush" work which it required during the year. Attorneys' briefs are frequently received late at night, with insistent demand for deliveries of printed copies the next morning. The Printing Office thus bears the brunt of the final rush of attorneys whose time limit for court filings has about expired. In recognition of this service the following letter of thanks was received from Mr. Claude R. Branch, assistant to the Solicitor General of the United States:

All of our briefs were finished, so that we were able to file them in the Supreme Court to-day. I realize that we imposed a great burden upon you, and I appreciate the speed and accuracy with which you had the work done. Please accept the thanks of this department for your assistance in a time which was very trying for us.

HANDLING OF MATERIALS AND PRODUCTS

The shipments of materials and products to and from the Government Printing Office during the fiscal year 1930 weighed approximately 100,000,000 pounds, practically all of which tonnage was handled in Washington by the motor trucks of this office. Shipments of paper amounted to 58,434,973 pounds, which were received in 1,347 car lots, and 143 less-than-car lots. Other materials came in 1,111 less-than-car lots and 85 car-lot shipments.

Outgoing shipments included 10,130,425 pounds of postal cards, requiring daily deliveries to mail trains.

Deliveries of office products to Government departments and establishments in Washington totaled 129,397 for the year, a daily average of 414 deliveries, 58 more per day than for the preceding year.

The Stores Division and delivery section did an excellent job in handling the immense tonnage with due care and promptness, notwithstanding their present inadequate quarters and equipment.

Plans are in progress, however, to provide the Stores Division with additional space and to enlarge the facilities of the delivery section, which is already making good use of its new garage.

With the new 16-ton elevator, loaded motor trucks can be lowered to the level of the basement floor, where a tractor and train of 12 trailers are used to convey the heavy shipments of paper to all parts of the immense storage spaces. This handling is now done in half the time and with a minimum of manual labor. By an inclined driveway, motor trucks can also descend to another part of the basement for delivering and receiving goods which are handled by a continuous conveyor system. Electric tiering machines are used throughout the storerooms for piling rolls and cases of paper, and a tram-rail electric hoist facilitates the handling of the vast stock of heavy postal-card paper rolls.

DEPARTMENT OF COMMERCE HEADS LIST

For the first time, the Department of Commerce has become the largest customer of the Government Printing Office, with a total expenditure of \$2,572,597.16 for its printing in the fiscal year 1930. This sum includes charges of \$1,191,228.24 for the Patent Office and \$1,381,368.92 for all other organizations under the Department of Commerce. Heretofore Congress and the Post Office Department have been yearly rivals for first place in the amount of work done by this office.

In number of publications printed during the year, the Department of Commerce easily held third place, with the Departments of Agriculture and War far in the lead. Commerce publications for the year totaled 8,360,570 copies, an increase of 2,368,198 over the number printed in 1929.

PRINTING FOR THE PATENT OFFICE

Work for the Patent Office consisted principally of printing 66,094 specifications of inventions, trade-marks, and designs, containing 176,047 type pages, an increase of 22,731 pages over the 1929 total. The copies for the year 1930 totaled 6,268,248, an increase of 578,840. Patent specifications printing for the fiscal year 1930 cost \$950,424.01, an increase of \$159,408.49.

The weekly Official Gazette of the Patent Office totaled 294,372 copies for the fiscal year 1930 and contained 15,756 type pages. The printing of the issues of the Gazette for 1930 cost \$237,883.32, an increase of \$25,548 over cost of 1929.

Type set for all issues of patent specifications and the Official Gazette in 1930 totaled 482,565,000 ems, which kept at least 64 linotype machines busy eight hours every workday throughout the year.

LARGEST ISSUE OF PATENT SPECIFICATIONS

The largest weekly issue of patent specifications ever printed was the issue of June 24, 1930, which included 3,174 patents, being four times the normal number. The extraordinary issue of that date was due to the rush of patentees to escape the increase of fees that became effective by law on June 1, 1930, and to the requirement of the Patent Office that the specifications shall be printed the fourth week after the closing of each issue.

No advance notice was given to the Public Printer to prepare for such an emergency, but, notwithstanding the suddenness of the tremendous task, the Government Printing Office was able to deliver the printed specifications and Gazette within the required time limit.

Ninety-five linotype machines had to be kept busy on this work 12 hours a day for 5 consecutive days. In addition, 58 machines worked overtime at night to set the immense amount of type required for the printing of the specifications within the arbitrary time limit set by the Patent Office. This almost unbearable hardship on the operators and proofreaders was unavoidable under the circumstances, but the Public Printer has informed the Patent Office that he would not feel justified again in imposing such a strain upon them.

PUBLIC PRINTER APPEALS TO DEPARTMENT

To avoid a recurrence of the difficulty, the Public Printer advised the Secretary of Commerce of the facts in the following letter, dated July 16, 1930, and suggested a modification of the Patent Office rules so as to provide for the printing of a reasonable number of patent specifications within the 3-month period allowed by law:

In view of the recent tremendous increase in printing patent specifications which almost overwhelmed this office, I respectfully request that rule 167 of the Rules of Practice in the United States Patent Office be amended so as to restrict the issue of patents on any particular date to a reasonable number which can be printed by this office within the time specified.

The rule now provides that the issue shall close weekly on Thursday and that the patents bear the date as of the fourth Tuesday thereafter, which allows the Government Printing Office less than four weeks in which to print and make available the patents on or before the date arbitrarily set by the Commissioner of Patents. The law (U. S. Code, title 35, sec. 41) provides that "every patent shall issue within a period of three months from the date of the payment of the final fee." It is thus possible for the Commissioner of Patents to date patents ahead for printing within a period of three months instead of a period of less than four weeks as now required by rule 167.

If the Commissioner of Patents so desired, he could under the law date a limited and reasonable number of patents as of the fourth Tuesday after the close of the weekly issue and prorate the remainder of that issue for the succeeding Tuesdays within a period of three months.

This request is the result of the tremendous task which the Government Printing Office successfully undertook in the printing of 3,174 patent specifications and the Gazette for the issue of June 24, which followed an issue of

1,723 patents for the preceding week of June 17. The issue of June 24 was nearly four times the normal issue, and it could not have been printed in time if extraordinary measures had not been adopted by this office.

BURDEN PLACED ON THE PRINTING OFFICE

It was necessary to use 95 linotype machines in setting the vast amount of type required for the issue of June 24, and the operators of these machines had to be kept at work 12 hours a day for 5 consecutive days. In addition, approximately 58 linotype machines were used for the available time remaining on the 12-hour shift of the night force, which was employed on patent printing after completing the urgent congressional work of the night. These long hours of service proved to be an almost unbearable strain on the workmen and resulted in a great hardship, which I do not feel justified in again imposing on them. However, they responded splendidly to the emergency, of which we had no warning from the Commissioner of Patents, and succeeded in completing the issue on time, which I do not believe the commissioner himself thought was at all possible. I have not received any expression of appreciation from him, but felt that it was my duty to congratulate the employees for the wonderful service they had rendered, as shown by the inclosed communication [not printed] to them which was printed and posted throughout the office.

STATEMENT OF WEEKLY PATENT ISSUES

The following statement shows the unusual burden placed upon this office by the issues of June 17 and 24, in comparison with the more normal issues for several weeks preceding and following those dates:

Issues	Patents	Designs	Trade-marks	Reissues
Jan. 7-Apr. 29 (average).....	865	40	175	10
May 6.....	1,020	40	304	4
May 13.....	965	53	303	9
May 20.....	912	44	167	5
May 27.....	1,036	50	240	12
June 3.....	1,276	48	166	9
June 10.....	1,497	51	136	4
June 17.....	1,723	61	333	8
June 24.....	5,174	48	144	11
July 1.....	1,379	44	240	3
July 8.....	461	53	392	7
July 15.....	522	44	331	10
July 22.....	494	68	200	9
July 29 (estimated).....	575	58	110	12

I invite your attention particularly to the great decrease in the issues for July 8, 15, 22, and 29. These small issues indicate that if the Commissioner of Patents had restricted the issue of June 24 to a reasonable number which this office could handle under normal conditions—approximately 1,200—the remainder of that abnormal issue could have been absorbed in the issues of the following weeks without imposing any undue burden on this office.

As a matter of fact, it was necessary to charge the Patent Office \$9,770.52 for the overtime work required on the issue of June 24. This additional charge would not have been necessary if the issue on that date had been limited to a reasonable number of patents.

PROPOSED REGULATION OF WEEKLY ISSUE

Although the issue of patents has dropped below the normal number since that time, I have been informed that when the additional force of the Patent

Office gets in full operation there will again be a very decided increase in the weekly issue of patents. I can assure you that this office will do everything in its power to meet the situation, but we ought not to be required to print more than approximately 1,200 patents for each issue. This number would be an increase of about a third over the former normal issues, and I believe it will safely meet the requirements of the increased force of the Patent Office.

I therefore respectfully urge that immediate consideration be given to the amendment of rule 167 of the Rules of Practice so that a limit may be placed on the number of patents to be printed as of the fourth Tuesday after the closing of the issue at approximately 1,200 patents and that the excess number of any specific issue be prorated to bear the dates as of the fifth, sixth, seventh, eighth, or whatever Tuesdays may occur thereafter within the period of three months as provided by law.

Thanking you for whatever consideration you may feel disposed to give to this suggestion and assuring you that the Government Printing Office will continue to do its utmost to give satisfactory service, I beg to remain, respectfully yours.

COMMISSIONER OF PATENTS OBJECTS

The Commissioner of Patents, in replying to the Public Printer's proposal, admitted that the rule could be changed to comply with the suggestion but claimed that there would be grave danger of invalidating some patents by a longer delay in their publication. If this is true, then the practice of delaying each issue for nearly a month, which the commissioner states has continued for over half a century, likewise endangers the validity of many patents during the four weeks he has allowed between the date of issue and publication of patents. As a matter of fact, the law authorizes the commissioner to issue a patent any time within three months from the date of payment of the final fee, and the limitation of issue within that period as proposed by the Public Printer complies fully with the law.

However, the matter appears to have been adjusted satisfactorily by a statement from the Acting Secretary of Commerce, Hon. E. F. Morgan, under date of August 21, 1930, that it does not appear likely any further weekly issue of the Patent Office, even with the increased personnel, will exceed 1,200 patents, the number suggested by the Public Printer as a fair limit for a single issue.

SPLENDID ACHIEVEMENT, SAYS SECRETARY

In his reply the Acting Secretary of Commerce kindly expressed his appreciation of the timely printing of the record-breaking issue of patents for June 24, as follows:

The department regrets that no formal acknowledgment was transmitted of its appreciation of the hearty cooperation of the Government Printing Office in the printing of the patents and Gazette for the issue of June 24. It was a splendid achievement and reflects great credit on your organization.

The Acting Secretary of Commerce transmitted with his letter a memorandum from the Commissioner of Patents, which contains the following appreciative comments concerning the work of the Government Printing Office:

Our issue division is on very cordial terms with those in the patent section of the Government Printing Office and certainly expressed to them appreciation of the work done in getting out on time the unusual issues in June.

We also appreciate the fact that getting out our weekly issue of patents and the Official Gazette, with its 1,200 original cuts each week, is probably the biggest piece of printing in any department of the Government, and we rejoice in the fact that through the cooperation of the Government Printing Office it has not been late for a number of years, whereas before the appointment of the present Public Printer and the present commissioner the Official Gazette was frequently late—sometimes as much as 10 days—and therefore had to bear two dates, one the date of issue of the patents and trade-marks and the other the date of delivery.

SURVEY BY THE BUREAU OF EFFICIENCY

Evidently acting upon the statement in the Public Printer's annual report for 1929 that copy for patent specifications presents the most difficult task in Government printing owing to its lack of proper preparation by the Patent Office, the Department of Commerce requested the Bureau of Efficiency to make an extensive study of the subject. Dr. George C. Havenner, an able authority on Government printing, was assigned to this survey by the Bureau of Efficiency and submitted a report several months ago, which substantially sustains the recommendations in the Public Printer's annual report for 1929.

Transmitting Doctor Havenner's report for consideration by the Public Printer, the administrative assistant to the Secretary of Commerce wrote under date of August 4, 1930:

At the request of this department the United States Bureau of Efficiency detailed Dr. George C. Havenner to make a study of the printing work performed by the Government Printing Office for the Patent Office. Doctor Havenner conducted an extensive survey and recently submitted a comprehensive report with several recommendations looking towards a more economical handling of the work. Attached is a copy of that part of the report wherein recommendations are made which have a bearing on the work performed by your office.

It is believed that arrangements may be readily effected to adopt these recommendations, which it is hoped will result in economies in your office as well as in this department. However, before giving instructions as to the adoption of the recommendations, the Secretary of Commerce would be pleased to receive your comments as to their merits from the standpoint of the Government Printing Office.

Particular attention is called to the first recommendation, which provides for the setting up in the Patent Office of a section of copy editors to prepare printer's copy of patent specifications. Subsequent to the survey of Doctor Havenner the examining corps of the Patent Office was considerably increased, and it will undoubtedly be necessary to increase to some extent the personnel

of the proposed unit. The Patent Office will have to request additional funds from Congress for this new force, and it will be of valuable assistance to us if you could estimate how much savings could be expected in the charges of your office if the specifications were properly edited and in good shape when forwarded to you. Briefly, Congress will expect us to reduce our printing appropriation by even a greater amount than will be required for the new unit, and we would appreciate your observations as to whether this would be possible.

Will you kindly let the Secretary have your views on the recommendations as well as the proposed agreements? If there are any other points which present themselves to you in this connection and you would like to incorporate them in your letter, they will receive careful consideration, as the department is quite anxious to adjust all of these related questions at the same time.

RECOMMENDATIONS OF EFFICIENCY EXPERT

The recommendations and suggestions of Doctor Havenner, the Bureau of Efficiency expert, so far as they affect the preparation of printer's copy of patent specifications, are as follows:

1. That there be established in the Patent Office a division or section of copy editors and typists to prepare satisfactory printer's copy of patent specifications.

It is believed that a corps of seven expert copy editors and three typists can do this work. This would save the Patent Office and the Federal Government many thousands of dollars each year over and above the cost of the proposed division or section, and relieve the employees of the Government Printing Office from doing work that should be done by the Patent Office.

2. That all inserts in patent specifications of 15 words or less be written by the Patent Office in their proper places in the copy.

Amendments of one or two words are written by the Patent Office examiners in their proper places in the copy, but amendments making one or two lines are seldom written by Patent Office employees in their proper places in the specification.

From January 1 to April 30, 1930, the copy editors of the Government Printing Office edited the copy for 15,315 patents. The Government Printing Office reports that in this number of patents there were 5,556 short amendments making 8,745 lines that should have been written by the Patent Office in their proper places. I examined many of these cases and found that a large number of the amendments consisted of less than 15 words which should have been written by the Patent Office in their proper places in the copy. To avoid passing copy from one linotype operator to another operator the copy editors in the Government Printing Office copied many of these amendments on slips of paper and pinned them to the sheet of copy in which the amendment was to be inserted.

3. That when the same amendment is to be inserted in two or more places in a specification on different sheets of copy, extra copies of the amendment be prepared by carbon process and a copy pinned to each sheet of the specification copy where it is to be inserted.

It frequently occurs that the same amendment is to be inserted in two or more places in the specification on different sheets of copy. In some cases of this kind it is now necessary to pass the same amendment or sheet of copy to two or more linotype operators. This results in considerable loss of time when-

ever one or more operators are required to wait on some other operator who is setting the amendment for insertion in his "take" of copy. Extra copies of amendments of this nature should be made by the Patent Office and a copy of the amendment attached to each sheet of copy where it is to be inserted.

4. That greater care be observed by the employees of the Patent Office in indicating on the patent jacket the number of claims made for the invention.

It frequently occurs that there are more claims for the patent than is shown by the jacket. This sometimes results in the renumbering of the claims by the printer and the sending of proof to the Patent Office for checking.

5. That greater care be observed by the employees of the Patent Office in recording the name of the inventor on the jacket, to avoid the necessity of sending proof to the Patent Office to have the name of the inventor as recorded on the jacket checked with his signature to the specification.

It is frequently necessary to send proof to the Patent Office solely for the purpose of having the name of the inventor as written on the jacket checked against the inventor's signature to the specification to determine the correctness of the spelling or some other point that is not entirely clear. This check should be made before the copy is sent to the Government Printing Office, thus avoiding the special submission of proof to the Patent Office to have this one item in the printed patent verified.

6. That the copy of the argument in support of the patentee's claims for the invention be removed from page 2 and attached to page 3 of the jacket along with all other papers which form no part of the printer's copy.

At the present time the patentee's argument in support of his invention is left attached to page 2 of the jacket along with the printer's copy for the specification of and claims for the invention, thus requiring the copy editors, linotype operators, and proofreaders in the Government Printing Office to handle much material that is not to be included in the printed patent.

7. That the Patent Office put on the face of the jackets for published trade-marks all matter that is to be printed as a part of the published trade-mark section of the Official Gazette and as a separate.

The jacket is the printer's copy for the heading and text matter that accompanies the illustration of the mark. To set the few lines of type for each published trade-mark the linotype operator is required to turn each jacket four times in his copyholder. If all of the matter to be set were shown on the face of the jacket it would expedite this work and result in some economy.

ACCEPTANCE TO SAVE \$50,000 ANNUALLY

In accepting the foregoing recommendations, the Public Printer advised the Secretary of Commerce on October 9, 1930:

A careful study has been made by all concerned in this office of Doctor Havenner's report as submitted by you, and I am pleased to advise you that his recommendations and suggestions are acceptable to the Government Printing Office with a few minor modifications. As a matter of fact, the recommendations are in accord with numerous suggestions which this office has presented to the Patent Office from time to time.

If the recommendations are fully complied with by the Patent Office, the Public Printer believes that a substantial economy can be effected in printing for the Patent Office and is willing to make a reduction of 15 cents per thousand ems

in composition charges to the Patent Office as soon as the recommendations and suggestions are put into effect. Based on the amount of composition charged to the Patent Office for the past three years, this will effect a reduction of approximately \$50,000 a year in the charges to that office.

It is to be understood, of course, that this reduction could be made only if the copy for patent specifications is properly prepared in the Patent Office so that it can be handled by our typesetting-machine operators and proofreaders in the same manner as other copy which is correctly prepared for printing.

The following reply was received from the administrative assistant to the Secretary of Commerce under date of October 10, 1930:

I am acknowledging receipt of your letter of October 9, with reference to the proposed changes in the method of submitting copy to the Printing Office for patent specifications and will be glad to see that your suggestions are given consideration at once.

We have included in our estimates for the next fiscal year provisions for setting up a unit of copy editors and typists to prepare the specifications at the Patent Office. * * * Of course, it will not be possible to set up the unit prior to the appropriation becoming available but you have our assurance that everything necessary will be taken care of as soon as possible.

EMERGENCY JOB FOR THE CENSUS BUREAU

Another emergency job which the Government Printing Office was required to do for the Department of Commerce during the year was the making of 126,622 portfolios for the 1930 census enumerators. After delaying the order for months, the Census Bureau submitted its requisition for the portfolios on December 10, 1929, and 12 days later approved the sample prepared by this office. Delivery as speedily as possible was requested, owing to the limited time left for distributing the portfolios to the census enumerators throughout the United States. The first delivery of 10,000 was made on January 22, and the completed delivery on February 19, 1930.

This remarkable production was possible only by the adoption of numerous innovations in the various bindery operations and the special use of machines instead of the usual handwork, which saved \$26,000 in the cost of the job as originally planned by the Census Bureau. The entire job required 3 carloads of binders' board, 13,000 yards of buckram, 56,000 yards of tape, and other materials in proportion.

In preparation for the printing of the 1930 census reports and statistics, the Public Printer has recently replaced 34 old monotype casters with an equal number of new and faster machines and has added 10 monotype keyboards to the already large battery of similar machines. However, very little copy has been received as yet for the printing of the 1930 census reports and statistics.

CONGRESSIONAL WORK

Congress stands next to the Department of Commerce in the volume of printing and binding. Congressional printing and binding for the fiscal year 1930 cost \$2,499,510.50 and almost exhausted the annual working capital of the Government Printing Office available for that purpose.

The largest item in the printing bill for Congress is the Congressional Record, which cost \$758,693.94 for the fiscal year 1930, an increase of \$178,404.63 over the preceding year. The Record printing charges for the fiscal year 1930 included the daily issues of the first session of the Seventy-first Congress, the entire bound edition for that session, and the daily issues for the second session. The cost of the daily and bound Records for the first session of the Seventy-first Congress was \$374,710.52, and for the second session, \$766,616.07.

DISTRIBUTION AND SALE OF THE RECORD

The daily Record averages about 36,000 copies, including 88 copies allotted to each Senator and 60 to each Representative for free distribution. Paid subscribers to the daily Record for the present session number 520, which is about the average number of subscriptions each session.

If a Member of Congress does not exhaust his quota of daily Records, he is allowed to have a limited number of bound sets of the permanent Record of each session. In all, 3,000 sets of the permanent Record of each session are bound for distribution by Members of Congress.

The permanent Record for the second session of the Seventy-first Congress from December 2, 1929, to July 3, 1930, filled 12 volumes containing 13,366 pages. Although Members were allowed until July 21 to submit withheld speeches, the final volume, including the index, was completed on October 13, 84 days after the last issue of the daily Record.

For the second session of the Seventy-first Congress, 166 numbers of the daily Record were issued, with an average of 80 pages each, the highest average ever maintained for a long session of Congress. The largest Record of the session contained 144 pages, and there were 34 issues ranging from 100 to 135 pages each. Approximately 2,300,000 pounds of newsprint paper were used in printing the daily Record for the second session of the Seventy-first Congress.

IMPROVEMENTS IN PRINTING DAILY RECORD

A number of improvements have been made in the printing and delivery of the daily Record in recent years, the latest change being the use of an entirely new and more legible type face beginning with

the first number for the third session of the Seventy-first Congress on December 1, 1930. The new dress of type, which was approved by the Joint Committee on Printing, will increase the number of pages about 15 per cent on account of the more open letters and wider spacing between lines, but it is thought that the greater legibility and better typographic appearance of the Record will fully justify the additional expense. There had been no change in the Record type since the replacement of hand composition by typesetting machines over 25 years ago. Even then only minor changes were made in the original face which had been used from the beginning of the Congressional Record in its present form in 1873.

During recent years a complete equipment of new and more efficient machines has been installed to improve every operation in the printing and binding of the Record. Seventy-two of the latest model linotype machines are now available to set the type required to complete the publication of the Record on scheduled time every day that Congress is in session.

BETTER EQUIPMENT FOR THE WORK

In addition to the new typesetting machines, which were especially designed for Congressional Record work although useful at other times for various publications, the Platemaking Division has been equipped for better and faster production of stereotype plates with a 5-ton metal pot, electrically heated and pump-operated, and an hydraulic molding machine which molds and dries the mats for eight Record pages at one operation.

The presswork, bindery, and mailing operations for the Record have been removed from separate locations on several floors and united for straight-line service at a central place where two new 64-page Record presses were installed several years ago. With an additional press of the same size to be installed soon, the office will then be equipped to meet any emergency in printing the Record and will be enabled to produce additional copies whenever Congress may decide to increase its distribution.

Regular delivery of copy for the printing of the daily proceedings does not begin until 7 o'clock in the evening, and Members are allowed until midnight to withhold their remarks for revision or correction. If there is a night session of either House, copy may be received after midnight, but the Record is printed on time the next morning regardless of its size.

RECORD ISSUED ON SCHEDULED TIME

A newspaper time-schedule was established by the Public Printer several years ago for the various operations in connection with the

printing and delivery of the daily Record. Since then there have been very few delays. The schedule provides that the city delivery shall begin not later than 5 a. m. and the mailing of out-of-town copies completed not later than 8 a. m. The city deliveries are completed before 8 o'clock each morning.

During the last session every issue but one was mailed before 8 o'clock in the morning. This prompt service enables the post office to place the Record mail sacks on early-morning trains and speeds up their delivery to distant points one or two days sooner than was possible under the old practice of completing the mailing whenever convenient on the day following the proceedings in Congress.

A typical example of the ability of this office to complete the printing and delivery of the daily Record on time, regardless of its size or the late hour of adjournment, occasioned the following comment in the Washington Herald of July 5, 1930:

A 150,000-word issue of the Congressional Record brought to Senators and Representatives yesterday the whole cold-type story of the fever and flurry of Thursday's closing session of Congress.

Although the Senate did not adjourn until 10.37 p. m., the Record was out on time this morning. The Record covered 127 deep double-column pages.

SPEED IN PRINTING AND DELIVERY

Even greater speed was shown recently in the printing and delivery of the 160-page Record of December 20, 1930, when both Houses of Congress remained in session until midnight. The last copy for printing the Senate proceedings of that day was not received until 2.15 a. m., and the linotype section was not able to lock up the last form for plating until 4.25 a. m. The presses started at 5.10 a. m. and completed the edition of 36,500 copies in time for the city delivery to begin at 6.30 and for the entire mailing to be finished by 8.30 the same morning.

Many compliments have been received from Members of Congress for the promptness and accuracy with which the daily Record is printed, notwithstanding the numerous requirements over which this office has no control, such as the withholding of speech copy until midnight, late night sessions, and the uncertain number of pages until all the manuscript for the day's proceedings has been received. Typical of these comments are the following quotations from letters of appreciation which the Public Printer received during the year:

From Congressman Cannon of Missouri:

Unquestionably your force in charge of the Congressional Record is the most efficient corps of men in the world.

From Congressman Kvale of Minnesota:

I may say that I have nothing but admiration for the manner in which your offices are conducted.

COST OF CONGRESSIONAL PUBLICATIONS

Congressional publications, other than the Record and bills, cost \$1,040,203.33 for printing and binding 4,910,630 copies, including hearings, reports, documents, and various papers, in the fiscal year 1930. The expenditure was \$228,262 less than for the preceding year, although the number of copies increased 501,936. Of bills, resolutions, and amendments for various stages of their consideration by the Senate and the House, 8,859,918 copies were printed, an increase of 1,688,901 over the preceding year. The cost, \$451,334.27, was \$58,962.34 more than for the fiscal year 1929. During the second session of the Seventy-first Congress covered by this report, 11,078 bills and resolutions were introduced in both Houses of Congress and printed in various forms for legislative consideration.

The printing of bills, beginning with the present session of Congress, has been greatly facilitated by the installation of new molds on the 20 linotype machines regularly used for bill work. The new molds produce recessed slugs, thus eliminating the slow and more expensive hand slugging (spacing between the lines) and reducing the metal weight of each bill page by approximately 4½ pounds.

Based on the number of bill pages for the preceding session of Congress, the new method of casting recessed slugs will effect a saving in the type metal of approximately 300,000 pounds, valued at \$30,000 annually. The handling of the lighter forms is also a great relief to the workmen, who formerly had to lift approximately 1,800,000 more pounds of type annually than will be required in the production of the recessed slugs.

INVENTIONS BY OFFICE EMPLOYEES

The mold was invented several years ago by Mr. John P. Murray, whose outstanding ability as a printer had also distinguished his long service in the Government Printing Office. Mr. Murray was unable to perfect the device before his death, but it was subsequently improved and completed by Mr. Luther L. Browning, assistant linotype machinist in charge, to whom chief credit is due for the recent successful construction and operation of the new molds.

It is gratifying to record the fact that the Government Printing Office has among its employees other capable men like Murray and Browning who have devoted themselves to solving many perplexing mechanical problems for the benefit of this office. Among those who are deserving of special mention in this connection are Machinists Russell Tyree and E. Edmond Smith for numerous improvements of bindery machines, Chief Type Machinist Liddle for his invention of a linotype matrix-washing machine, Type Machinist Gustave A. Anderson for inventing the oilers used on all monotype casting

machines, Chief Pipe Fitter Ovilup H. George for developing a form-washing machine, and Machinists William H. Thaler and John F. Nesline for special attachments on tabulating-card presses. In no other printing works have so many improvements of machinery been developed by its own employees as there have been by those of whom the Government Printing Office is justly proud.

COST OF PRINTING FOR COMMITTEES

Printing for committees of Congress in 1930 cost \$349,601.25, which was \$210,240.72 less than in 1929. The committees appointed for the special tariff session submitted 68 reports for printing, as compared with 3,161 committee reports printed during the second session of the Seventy-first Congress, but the tariff hearings and reports were far more voluminous in 1929.

Committee hearings printed in the fiscal year 1930 cost \$177,064.66, a decrease of \$229,487.99 from the preceding year which included the extensive tariff hearings. The 1930 hearings totaled 92,541 copies, while in 1929 the number was 211,950. Likewise the number of type pages of hearings was reduced from 86,358 for 1929 to 43,599 for 1930.

Appropriation Committee hearings in 1930 contained 13,456 pages, only 90 less than the record number. Other large hearings printed during the year were the Lobby Investigation, Senatorial Campaign Expenditures, Communist Activities, and Rivers and Harbors. House committees had 279 hearings printed and Senate committees 105.

Most of the hearings must be printed overnight for delivery the morning after receipt of copy. This is especially true of the voluminous appropriation hearings, which have the right of way along with the Congressional Record in the work of the night force.

TARIFF PRINTING A STRENUOUS TASK

Tariff printing, which began in the fiscal year 1929 and continued through the fiscal year 1930, reached a total cost of \$430,616.15 for the vast number of publications, including bills, hearings, reports, and documents required for the enactment of the new tariff law. Tariff hearings alone totaled 20,033 type pages, most of which were printed several times as separates and in consolidated form. It has been estimated that in addition to these publications, the tariff debates in the House and Senate filled 2,800 pages of the Congressional Record, the printing cost of which was approximately \$151,000.

Final proofs for printing the completed tariff bill with 1,253 numbered Senate amendments were not received until 6.50 Monday evening, March 24, 1930. Presswork on the 535-page bill began immediately thereafter, and by working the pressroom and bindery

forces through the night it was possible to start delivery of the printed bills to the Capitol at 7.30 the next morning, when 1,500 copies were made available. The entire Capitol order of 10,742 copies was filled by 11 o'clock the same morning. Thus a new record was established for the Government Printing Office which no other printing works in the world could have equaled.

Another particularly strenuous tariff job was the printing of a Comparison of Rates of Duty in the Pending Tariff Bill (Senate Doc. 119), which consisted of 111 pages of tabular composition, each 20 inches in length. Copy was received on March 25, 1930, proof sent out two days later and returned the second night following, when a staff of 16 experts from the Tariff Commission worked until 7 o'clock the next morning on page revisions. Part of the night printing force worked until 8 o'clock that morning on the make-up and returned 10 hours later to complete the job. One thousand copies of the complicated document were ready for delivery to the Capitol at 8 o'clock the next morning.

THANKS OF TARIFF COMMITTEE CHAIRMEN

This comparison print of House and Senate tariff rates was submitted to the Senate the same morning (March 25, 1930) by Senator Smoot, chairman of the Senate Finance Committee, who placed the following expression of thanks in the Congressional Record of that date:

I want to take this occasion to extend my sincere thanks to the Legislative Counsel and to the Public Printer for the splendid work they have done in the preparation of the bill so that it could be presented to each Senator this morning in the way I have just stated. They worked all day Sunday and Sunday night to enable me to have this done. I desire to say further that from the beginning they have all done everything it was possible to do to hasten the presentation of information so that it could be placed in the hands of each Senator promptly.

Upon completion of the tariff printing, the Chairman of the Committee on Ways and Means of the House, Hon. W. C. Hawley, sent to the Public Printer the following letter of appreciation, dated June 25, 1930:

Now that the work of writing the tariff act of 1930 has been completed, I desire to express to you, on behalf of the committee, my sincere appreciation of the fine spirit of cooperation given the committee—and the Congress—in the long period of its pendency.

I am informed that this bill required the greatest amount of printing in the history of legislation, and when we consider the thousands of pages of copy required and the speed and accuracy with which it was handled by the Printing Office, the highest commendation and praise are due the men who accomplished this task.

I congratulate you on your splendid organization and its high state of efficiency and workmanship.

Another phase of the service rendered by the Government Printing Office, in connection with the printing and distribution of tariff publications during the long period of revision, is shown by the following letter addressed to the Superintendent of Documents by the National Council of American Importers and Traders:

Again, may we take this opportunity of thanking you for your courtesy and for the efficient manner in which the sending out of these tariff acts was handled by your office. It was a source of great satisfaction to us here, and favorable comment has been received from merchants throughout the country.

COMMITTEE CALENDARS GROW IN SIZE

Committee calendars of pending bills and their legislative status have developed into pretentious publications in recent years. They are among the most difficult jobs to handle, owing to hurried preparation of copy and the requirements for immediate delivery. About 30 committees maintain active calendars in addition to the business calendars of the Senate and the House. The final printing of the House calendar last session contained 208 pages with the index. The House Committee on Military Affairs had a calendar of 263 pages; the Judiciary Committee, 103 pages; and the Committee on Naval Affairs, 98 pages. At the close of the session, the Government Printing Office was required to hold 1,280 type pages of committee calendars in 160 forms for further use during the present session.

Pamphlet copies of congressional speeches were printed during the fiscal year 1930 to the number of 16,843,850, costing \$67,368.88, all of which was paid by Members from their personal funds. Although this amount includes speech printing up to July 1 for the congressional campaign of 1930, it exceeded the preceding off-year expenditures by less than a thousand dollars. Speech envelopes printed in 1930 totaled 22,610,800 and cost \$50,312.79, which by law is charged to Congress.

Farmers' Bulletins, distributed largely by Members of Congress, attained a total of 15,157,200 copies for the fiscal year 1930 and cost \$206,919.37. The growing popularity of these publications is shown by an increase of 3,796,624 copies for the year.

AGRICULTURE YEARBOOK NOW UP-TO-DATE

Another publication of the Department of Agriculture that is widely distributed by Members of Congress is the Agriculture Yearbook. The Yearbook for 1928, which was printed in the calendar year 1929, had an issue of 400,576 cloth-bound copies of 1,149 pages each, costing \$281,879.99.

No Agriculture Yearbook was issued for 1929, but the text for its publication was included in the Yearbook for 1930, in accordance

with the Public Printer's suggestion that the Yearbook ought to be designated by the year of its publication in order to avoid the appearance of being out of date when printed. Thus, hereafter, Agriculture Yearbooks will correspond to the year in which they are printed and no longer be dated back to the Secretary's report for the preceding fiscal year. The change makes the Yearbook a current publication like the yearbooks of other Government departments.

The Agriculture Yearbook for 1930 contains the following announcement of this change of dates:

Beginning with this 1930 issue, the Yearbook of Agriculture, in conformity with the practice generally followed in the publication of yearbooks, is designated by the year in which it is printed rather than by the year surveyed. Thus the present volume surveys agricultural conditions in 1929. The new system of dating more truly indicates the strictly up-to-date character of the volume. This procedure does not break the continuity of the statistical and other material published, nor does it involve any omission in the Yearbook series.

The Yearbook for 1930 was O. K'd by the Department of Agriculture for press on March 15, 1930, and the first delivery of 1,260 bound copies for congressional distribution was made on April 4, 1930. By July 1, 198,901 copies were available for distribution.

BOOK FOR WAR MOTHERS' PILGRIMAGE

Congress authorized the printing of a number of other important publications during the fiscal year 1930, conspicuous among which was The List of Mothers and Widows of American Soldiers, Sailors, and Marines Entitled to Make a Pilgrimage to the War Cemeteries in Europe.

This memorial volume of 354 pages was suitably bound in blue cloth, with a special hand-lettered cover design. The edition called for 11,184 copies. Manuscript was submitted on December 23, 1929, and the delivery completed on February 11, 1930, in ample time to be available before the first group of war mothers sailed for Europe.

The vice chairman of the Joint Committee on Printing, Hon. Edgar R. Kiess, took a special interest in the publication, and on receipt of the first copy, wrote the Public Printer a letter of congratulations "on the attractive and satisfactory form in which this document has been printed."

Another publication of outstanding artistic as well as historic value which Congress sanctioned during the year was The Development of the National Capital, profusely illustrated with views of the new public-buildings projects now under way in Washington. A limited edition was printed, bound in green silk cloth and attractively ornamented.

SEVERAL IMPORTANT LAW PUBLICATIONS

Several valuable law publications were also printed by order of Congress during the year, including the Interstate Commerce Acts. Annotated, in five volumes of 4,462 pages, bound in buckram; the Code of Laws of the District of Columbia, in a volume of 824 pages; the Codification of the Internal Revenue Laws; Indian Laws and Treaties, a volume of 1,411 pages; and the Annual Supplement to the United States Code of Laws.

Interstate Commerce Commissioner Aitchison, under whose direction the annotated edition of the Interstate Commerce Acts was prepared, in writing an appreciation of the skill and helpfulness of the Government Printing Office staff who assisted him, stated, "the ability of the Printing Office to handle an enormous job of this sort in such an easy manner has been a real revelation."

On behalf of the compilers of the District of Columbia Code, Mr. Edwin A. Mooers wrote the Public Printer as follows:

I am writing, on behalf of my associate and myself, to express to you our sincere appreciation of the uniform courtesies that those officials have always extended to us and particularly of the close cooperation and helpful suggestions of Mr. Barnhart and Mr. Phillips.

We also feel that the editors in your office, the proofreaders, and the printers should be commended for the admirable accuracy with which their work was done.

Chairman Hawley, of the Joint Committee on Internal Revenue Taxation, wrote, in regard to the Codification of Internal Revenue Laws, recently printed, the following appreciation:

I wish to express the sincere appreciation of this committee for the prompt and efficient manner in which the printing of this document has been handled.

THE WRITINGS OF GEORGE WASHINGTON

By authority of Congress, a monumental publication has been undertaken in the printing of all the writings of Washington from original manuscript sources under the direction of the George Washington Bicentennial Commission. The definitive edition will consist of 25 volumes, more or less, and include all the written and printed words of Washington, except his famous diary already in print, together with all of his General Orders during the Revolutionary War, which latter are now to be printed for the first time.

The principal source of material for the publication will be the original Washington Papers which have been preserved by the Government for many years and are now in the possession of the Library of Congress. These manuscripts contain about 98 per cent of the writings of Washington that have survived and constitute 75,000

folios of written records bound in 400 large volumes. The printed edition will contain all these papers as well as every other writing of Washington that a world-wide search may reveal.

Congress has ordered that 3,000 sets of the edition of the Writings of Washington be printed and bound at the Government Printing Office, of which 2,000 sets shall be sold by the Superintendent of Documents and 1,000 sets reserved for designated official distribution upon completion of the entire edition. Depository libraries are excluded by law from the distribution and will be required to purchase whatever sets they may desire.

For the preparatory work and the printing and binding of the edition, Congress has appropriated the sum of \$157,975. The sales price of each set of approximately 25 volumes will be announced as soon as the expenditures from this appropriation may be determined.

FOUR VOLUMES ARE ALREADY IN PROGRESS

Volume 1, including the writings of Washington during the years 1745 to 1756, inclusive, has already been printed and contains 585 pages. The binding of this volume will be completed soon after January 1, 1931. The type has also been set for volumes 2, 3, and 4, and they will be completed at an early date. Several years will be required to finish the series, as the commission plans to print about four volumes annually until the edition is completed.

A new and distinctive face of 12-point type was procured for printing the text of the entire edition and the utmost care will be exercised to have it set in the best typographic manner conforming to the original style of Washington's writing. The title page was especially designed by the Government Printing Office also in the spirit of Washington's time, and a facsimile of Washington's book plate will be pasted inside the front cover of each book. Paper selected for the edition is 100 per cent rag stock of excellent printing qualities. Each book will be bound in specially embossed blue buckram with appropriate back titles in gold lettering.

The first volume contains, in addition to the writings of Washington during the years 1745 to 1756, inclusive, a foreword written and signed by the President of the United States who is also chairman of the George Washington Bicentennial Commission, and an introductory historical note by its editor, Dr. John C. Fitzpatrick. The frontispiece of the first volume is a half-tone reproduction of the Houden bust of Washington modeled from life at Mount Vernon in 1785, and underneath is a facsimile of Washington's signature. The first volume also contains several reproductions of original drawings and maps made by Washington and concludes with an elaborate index.

DEPARTMENTAL PRINTING

Printing for the Post Office Department ranked third in the products of the Government Printing Office for the fiscal year 1930 with a total of \$2,114,610.44, being only \$1,548.49 less than the charges for 1929. As usual, the largest item was the printing of postal cards, of which 1,731,266,760 cards were produced, a decrease of 88,914,468 from the total for the preceding year. The total charge for postal cards printed in 1930 was \$894,936.

There has been a decrease in the requirements for Government postal cards during the last three years due to the restoration of the 1-cent rate for commercial cards. However, the production of Government cards has nearly trebled in the last 10 years, the total output in 1920 being 699,300,420 cards.

Another big job of printing for the Postal Service is the production of money-order forms and application blanks. In the fiscal year 1930 there were printed 211,062,400 money-order forms for approximately 60,000 post offices throughout the United States, each form bearing the name and consecutive number of the respective post office. The increase over the number printed in 1929 was 2,901,000 and indicated that, notwithstanding other depression, money-order business had a fair growth for the year. The total for 1930 was 36 per cent greater than for 1920. Money-order printing in 1930 cost the Post Office Department \$171,293.28.

In addition, the department had printed 275,804,000 application blanks for domestic orders, an increase of 70,889,000 over the preceding year. During the year, the department also obtained from this office more than 300,000,000 other printed blanks and cards for the use of the Postal Service.

PRINTING FOR DEPARTMENT OF AGRICULTURE

Fourth and last among the million-dollar class of Government Printing Office patrons is the Department of Agriculture with a total printing expenditure in 1930 of \$1,014,610.10, an increase of \$210,781.22 over the charges for its work in 1929. The Department of Agriculture topped the list in number of publications, totaling 36,734,846 copies, which were considerably more than three times the number issued by any other department, and 12,584,787 copies more than its total for 1929.

The drought that devastated large sections of the country last summer caused a contrary result in the Government Printing Office, which reaped the benefit of the work required by the Department of Agriculture to aid in handling the distressing situation. Every possible effort was made to expedite printing needed in gathering information as to the extent of the drought and the relief of suf-

ferers. In recognition of this service, the Secretary of Agriculture addressed a letter of thanks to the Public Printer for "the splendid service" which the Government Printing Office rendered, saying "this type of service is a tribute to the fine organization which you are directing."

The Department of Agriculture, through its Bureau of Public Roads, was also interested in printing done for the American Organizing Committee of the Sixth Congress of the Permanent International Association of Road Congresses that was held in Washington from October 6 to 11, 1930. For the sessions of the Road Congress, a daily bulletin was published in four languages, each issue containing from 66 to 146 pages with illustrations. Copy of the proceedings was submitted between 3 and 10 p. m. each day, and 2,200 bulletins were printed at night for delivery by 8 o'clock the following morning.

INTERNATIONAL ROAD CONGRESS PLEASED

In appreciation of this service, the secretary-general of the congress, Dr. Thomas H. MacDonald, who is also Chief of the United States Bureau of Public Roads, wrote the Public Printer under date of November 26, 1930:

On behalf of the American Organizing Commission of the Sixth International Road Congress, I wish to express our appreciation of the work done by your organization in printing the Daily Bulletin during the week of the congress from October 6 to 11.

This bulletin was an important feature of our arrangements for guiding the work of the congress, which was attended by delegates from over 50 nations and at which four languages were spoken. All of the delegates used the Daily Bulletin and many of them expressed surprise at the possibility of issuing such a publication daily. The work done at the Government Printing Office has undoubtedly contributed to the favorable impression of American organization and methods which hundreds of foreign delegates carried home with them.

We feel that you are to be congratulated upon the efficiency of your organization.

For the Inter-American Conference on Agriculture, Forestry, and Animal Industry, which was held in Washington from September 8 to 20, 1930, a book of more than 400 pages of technical papers was printed in English and Spanish. Dr. Leon M. Estabrook, secretary to the organizing committee of the conference, expressed his appreciation of expediting and completing the book in time for use notwithstanding the delay in submitting the manuscript. "This effective cooperation of the Government Printing Office," said Doctor Estabrook, "was greatly appreciated by the organizing committee and by the delegates from the 21 countries represented at the conference."

FINE JOB FOR THE FEDERAL FARM BOARD

The Federal Farm Board, which issued 924,620 copies of its publications in the fiscal year 1930, commended the work done for it by the following letter from its secretary, Mr. Chris L. Christensen, under date of April 1, 1930:

We just want to tell you that we appreciate very much the trouble you went to in turning out the fine job you did on the first bound volume of our Federal Farm Board Minutes. Also we were more than gratified that you were able to handle the job so expeditiously.

We know that you are besieged by all the Government departments for priority in service and that it must keep you busy to satisfy every demand.

You can be assured that your fine cooperation with us is heartily appreciated.

Income-tax blanks to the number of 63,007,024 were printed for the Treasury Department in the fiscal year 1930. The principal ones required approximately 600,000 pounds of paper and were completed in record time by use of 18 high-speed presses and 8 folding machines.

The Treasury Department had 3,254,695 copies of its publications printed during the year. The total printing charged to the department was \$891,427.02.

For the Bureau of Industrial Alcohol, a number of monographs were printed in attractive form and occasioned the following letter of thanks from Commissioner Doran on July 22, 1930:

I wish to take this opportunity to express my sincere thanks and appreciation for the splendid work done by the Government Printing Office in connection with our publication program during the past fiscal year.

The character of the work was of a high grade and the expeditious manner in which the various monographs were handled for us reflected credit upon your organization. The cordial cooperation given us in prompt printing and delivery in a number of instances greatly facilitated the task of distribution.

Satisfactory printing service to the United States Coast Guard prompted its commandant, Rear Admiral Billard, to write:

This office desires to express to you its appreciation for the expeditious and efficient manner in which the various requests for printing from Coast Guard headquarters have been handled, and for the courtesies extended by personnel attached to your office.

PRINTING OF THE BIG ANNUAL BUDGET

The printing of the annual Budget of the United States is one of the biggest and most hurried single jobs that the Government Printing Office has to handle every year. The Budget for 1932, printed just prior to the present session of Congress, contains 930 pages, nearly all tabular matter, a decrease of 758 pages from the Budget for 1931, which had 1,688 pages. The decrease in pages was due largely to a change in style from broad measure of 90 ems

(6-point) to double columns of 44 ems each, which condensed the tabular matter so that it could be printed in about half the former width through the elimination of a great amount of blank space.

The first copy for the Budget was received in this office on September 18, 1930, and the last copy on November 26, 1930. In all, there were 8,333 folios of copy, requiring the setting of approximately 17,500,000 ems of type. The greatest number of folios of copy received at one time was 1,029, on November 3, the printed proof of which was forwarded to the Bureau of the Budget the next morning. Practically all of the type on this publication was set by the night force. Completed copies were delivered to the Bureau of the Budget for transmission to Congress in time for the opening of the present session, and delivery of the entire edition of 1,748 copies was completed on December 9, 1930.

In appreciation of the "admirable manner" in which this office handled the printing of the Budget for 1932 the Director of the Bureau, Col. J. Clawson Roop, wrote the Public Printer the following letter of thanks under date of December 8, 1930:

I want to express to you, and through you to your force of able assistants, my appreciation of the manner in which the printing of the 1932 Budget was handled by the Government Printing Office.

This printing work was handled with dispatch, accuracy, and smoothness of action. It is a testimonial of the efficiency of your establishment.

WORK FOR DEPARTMENT OF THE INTERIOR

Printing for various branches of the Department of the Interior, which issued 1,995,614 copies of its publications during the fiscal year 1930, cost \$395,805.57, an increase of \$66,899.55 over 1929.

A monograph printed for the Geological Survey under the title "The Titanotheres of Ancient Wyoming, Dakota, and Nebraska" received the following high tribute from the president of the American Museum of Natural History, Dr. Henry Fairfield Osborn, in a letter to the Public Printer, dated March 14, 1930:

I find it difficult to express my appreciation of the splendid manner in which this monograph was handled in the Government Printing Office under your direction, so that when it was finally turned out and the first copy was received December 31, 1929, I found it to be most admirable in every respect, in point of superb typography, of finely printed text and illustrations, of permanent paper so that it may last for centuries, and finally of new and permanent form of binding.

In this thoroughly artistic as well as practical and permanent form, I believe, it will reflect the greatest credit on the science of our Government, and by all the investigators and students of this subject in various parts of the world it will redound to American skill, thoroughness, and educational idealism.

Familiar as I am with the similar publications issued by various other governments, I believe this monograph will more than hold its own and will continue to sustain the already high reputation of our United States Geological Survey.

SERVICE TO COMMISSIONER OF EDUCATION

The Commissioner of Education, Hon. William John Cooper, likewise expressed appreciation of the cooperation of the Government Printing Office in supplying advance copies of the Survey of Land-Grant Colleges and Universities in time for the meeting of 300 representatives of those institutions in Washington last November. "I want you to know," wrote the Commissioner of Education, "how useful was this service provided by your office."

Another letter of appreciation came from the Director of the National Park Service, Hon. Horace M. Albright, who wrote under date of May 7, 1930:

I want you to know how deeply the officials of the National Park Service appreciate the personal interest you have shown in pushing through our 1930 circulars of general information for the various national parks.

This is the first time that practically all of our circulars have been available for distribution this early in the year. It facilitates tremendously our work of furnishing the traveling public with data regarding trips to the parks.

Thanking you for your excellent cooperation in this connection, and with warm personal regards, * * *

PRINTING FOR OTHER EXECUTIVE DEPARTMENTS

Three other executive departments, Navy, Justice, and Labor, increased their printing during the fiscal year 1930 as compared with 1929. Charges for Navy work amounted to \$792,405.44, an increase of \$117,340.33. Navy publications totaled 2,338,925 copies. The Department of Justice expended for printing by this office in 1930 the sum of \$264,647.18. Department of Labor printing amounted to \$279,013.84, and its publications totaled 1,815,450 copies.

Decreases in printing appear in the charges to the Departments of State and War, with a total for the former of \$233,045.67, and for the latter \$634,224.53. These charges do not include considerable additional expenditures which those departments made elsewhere for field printing. The War Department had 10,182,750 copies of its publications printed by the Government Printing Office during the year, a decrease of 3,670,461 copies.

Work for the Library of Congress, including that by the printing and bindery branches which this office maintains in the Library building, cost \$384,841.42 in 1930, an increase of \$50,339.09 over the preceding year.

The principal item of printing for the Library of Congress consists of catalogue cards for its own use and for the sale of duplicates to other libraries. The production of these cards during the fiscal year 1930 broke all records, totaling 21,860,000 cards, an increase of 1,432,000 over the preceding year.

For several years the reproduction of the exhausted catalogue cards has been done by offset printing in the main office, thus eliminating the resetting of a large amount of type. During the year, 2,676,000 cards were reprinted in this manner.

LIBRARY CARDS ARE IN MANY LANGUAGES

Catalogue cards are printed in more than 50 foreign languages and dialects, for which nearly 60,000 linotype matrices of accented letters and characters are used in addition to a large number of the standard letters. During the fiscal year 1930 a total of 91,091 titles were set in the numerous languages for new catalogue entries, an increase of 13,562 over the titles for the preceding year.

The main office had to assist the Library branch in handling the great increase of composition for the year, and to take care of future growth of this work two additional linotypes have been placed in the Library branch, which now has eight in daily operation.

The branch bindery at the Library of Congress is largely engaged in the rebinding and repairing of books and manuscripts. During the year 31,088 books were rebound, 5,195 repaired, and 2,208 volumes of newspapers bound. Manuscript repair jobs totaled 63,595, and 21,665 plates, prints, and photographs were mounted for Library use.

The most important work of the branch bindery is the repair and preservation of the treasured books and manuscripts in the Library of Congress, such as the Washington Papers, the records of the Presidents, and other valuable historic documents. Even the original manuscript of the Declaration of Independence was intrusted to the branch bindery for some preservative touches before it was reverently placed in the beautiful marble shrine of the Library which has become the mecca for all Americans.

EXCELLENT WORK OF BINDERY CRAFTSMEN

The Government Printing Office is justly proud of the ability of its bindery craftsmen to render such distinguished service. Others of its skilled bookbinders have also done excellent work recently in repairing and preserving many of the valuable Government papers, treaties, and records in the files of the State Department.

The largest amount of printing done for any independent establishment was that for the Interstate Commerce Commission, at a total cost of \$230,571.10. The commission's publications for the year numbered 1,665,826 copies and consisted mostly of decisions in pamphlet form.

Veterans' Bureau printing for the year cost \$173,635.93, an increase of \$30,195.62 over 1929.

DISTRICT OF COLUMBIA ORDERS INCREASE

Beginning with the fiscal year 1928, the government of the District of Columbia has been ordering practically all of its printing, binding, and blank paper from the Government Printing Office. The total charges for District work in the fiscal year 1930 was \$106,270.65, an increase of \$30,321.34 over 1929. During the fiscal year 1927 District printing ordered of the Government Printing Office amounted to only \$8,189.36. Comparison of typical items of printing indicates that Government charges for District work are approximately 40 per cent less than was formerly paid private contractors for work of lower quality.

Included in the work of the year for the District of Columbia were 27,788,601 copies of blanks, notices, schedules, and cards, largely for the use of the public schools in the District.

The diplomas of the Washington schools have also been printed by the Government Printing Office since January, 1929, to the number of 25,680 copies in nine different forms. The new diplomas, in Roman Forum type, printed on parchment paper of the same quality as is used for enrolling the acts of Congress, have been highly commended as notable examples of appropriately artistic printing.

The Smithsonian Institution and the National Museum, although expending a comparatively small amount for printing annually, always require work of the highest quality. Heretofore their publications have been delayed by the tedious composition, much of which is set in various Indian languages. However, the drive during the past year to finish up such long-standing jobs has expedited the completion of many of these publications. In a letter of March 15, 1930, Doctor Benjamin, editor of the National Museum publications, comments on "the wonderful speed with which the Government Printing Office has hastened our publications during the year."

GOOD PRINTING IS HIGHLY COMMENDED

It is also gratifying to know that scientists of the Smithsonian Institution are pleased with the printing of their publications, which are among the most difficult this office has to produce owing to their highly technical character and detailed illustrations. In this regard the following commendatory statement was made by Dr. Walter K. Fisher concerning one of the Smithsonian bulletins printed in 1930:

I am more than satisfied with its appearance. It is a beautiful piece of book-making, plates, printing, and editing. The plates (concerning which an author is always finicky) are splendid. I think the Government Printing Office has "done itself proud." In this world, where so much falls short of expectations, it is a fine experience to have one's expectations exceeded.

I shall always recall with pleasure meeting several gentlemen at the Government Printing Office. The fine spirit of cooperation which I experienced, and the esprit de corps which was clearly evident, impressed me greatly. It is a great organization.

Commendation of the work of the Government Printing Office has not been confined to its patrons in the Government service. The Public Printer recently received a letter in appreciation of the good work of the Government Printing Office from one of the foremost master printers in America, Mr. John Henry Nash, of San Francisco, whose beautiful books and rare typographic treasures have been accorded the highest honors throughout the world. In a letter under date of November 24, 1930, Mr. Nash thus praised the work of the Government Printing Office:

Please allow me to say here that it has always been a source of wonder to me how the Government Printing Office manages to turn out so much good work. I have received a great number of pamphlets and booklets from your office, which have been helpful to me, and I have marveled at the good quality of the work, when you have such a tremendous production to consider. The work is clean and well done—in fact, very much better than the average small job printing office turns out.

SUPERINTENDENT OF DOCUMENTS

The sale and distribution of Government publications by the Superintendent of Documents continue to grow apace with the increase of printing and the greater public information concerning this activity of the Government Printing Office. During the fiscal year 1930 the Division of Public Documents, under the direction of the Superintendent of Documents, distributed 68,808,109 copies of Government publications, an increase of 12,527,614 over the number distributed in 1929.

Free copies sent out on the orders of various Government departments and establishments reached a total of 56,940,242, an increase of 12,541,759 over the preceding year, and established a new mark for departmental distribution. The large increase in 1930, however, is attributable to the greater distribution of Farmers' Bulletins printed by the Department of Agriculture on orders from Members of Congress.

Sales copies for the fiscal year 1930 totaled 8,578,592, a decrease of 629,556 from the number sold in 1929. Cash orders during the year numbered 508,400, an increase of 18,086, and in addition 193,452 letters of inquiry regarding publications were received and answered.

Owing to the general business depression and resulting fewer copies sold, the 1930 receipts increased only \$3,170.05 over the sales receipts for the preceding year. Notwithstanding this handicap, the total

receipts from sales amounted to \$708,972.46, which was \$477,440.25 more than the receipts from the sale of publications in 1920.

PUBLICATIONS FOR DEPOSITORY LIBRARIES

The distribution of publications to the 500 designated depository libraries throughout the country totaled 1,935,159 copies for the fiscal year 1930, an increase of 739,011.

The mailing of all these publications required the filling and handling of 143,773 sacks containing 23,084,888 pieces of mail, each individually addressed.

Although the Superintendent of Documents maintains 1,914 mailing lists for departmental publications, an increasing number of other copies are being mailed by the various departments and establishments notwithstanding the act of August 23, 1912, requiring all this work to be done at the Government Printing Office. Several departments have been reequipped with extensive facilities for addressing, wrapping, and otherwise dispatching their publications.

To meet the immense requirements for the sale and free distribution of Government publications, the Superintendent of Documents received a total of 74,191,608 copies during the fiscal year 1930, an increase of 19,061,913 over the preceding year. The stock on hand July 1, 1930, totaled 38,781,447 copies, which represents the normal carry-over from one fiscal year to another.

The regular stock contains approximately 74,000 different titles of publications, presenting a vast range of subjects for selection by those who desire to purchase Government publications. The items of merchandise carried in stock by the largest mail-order houses average about half the items of publications that the Superintendent of Documents continually carries in stock for the service of his customers.

The procedure of handling the sales business was greatly improved during the year by fixing definite time schedules for this work, with the result that approximately 80 per cent of the cash orders are in the mails the same day they are received. Where the publications are not immediately available to fill these orders, notice is at once sent to the customers.

LETTER OF APPRECIATION TO "UNCLE SAM"

Satisfaction with this service has been frequently expressed by the public generally. An outstanding letter of appreciation was received recently from Mr. Henry L. Bullen, a noted authority on printing and librarian of the world-famed typographic library and museum of the American Type Founders Co., Jersey City, N. J.,

who addressed the following unusual communication to "Uncle Sam":

JERSEY CITY, N. J., August 21, 1930.

DEAR UNCLE SAM,

Care of Superintendent of Documents,

Government Printing Office, Washington, D. C.

DEAR UNCLE: AS an income-tax payer I feel impelled to send you a letter of appreciation. You give me value for my money more than is derived from any other expenditure. I am a printer and typefounder, who appreciates the assistance you afford through your various departments, via your great Printing Office and your Superintendent of Documents, in every angle of my business—materials, production, foreign and domestic trade, as well as in good citizenship. We, your citizens, I am afraid, are apt to receive your activities on our behalf in every industry and in every occupation with the indifference with which, from year to year, we receive the bounty of Heaven in the form of life-giving rain. Who gives rain a friendly thought until we run short of it?

The weekly list of your inexpensive helpful publications issued by your Superintendent of Documents, available to every citizen, is a marvelous conspectus of the helpful activities of your departments. You are the most active and greatest publisher of helpful scientific information in the world. From the printed documents you issue applicable to my own business I derive knowledge nowhere else obtainable, of great practical value, and worth many dollars a year to the industries with which I am connected. So it must be in other industries. No other government than yours, dear Uncle Sam, is doing nearly so much for its citizens as you do. Your best, ceaseless, and most important work is, in my opinion, that which rarely gets space on the front pages of our newspapers.

Yours loyally,

HENRY L. BULLEN.

SPECIAL METHODS OF HANDLING ORDERS

In order to give the public the best service possible in conducting a cash business, as required by law, the Superintendent of Documents has adopted the following special methods for the placing of orders for Government publications:

C. O. D.—Inaugurated to serve the public where publications are wanted immediately and price is unknown, which obviates necessity of remitting with order.

Deposits.—At the present time we have approximately 3,000 deposit accounts, which are very satisfactory to those who frequently order publications, as they eliminate the necessity of remitting with each order, and besides prevent delays in first obtaining prices.

Continuation orders.—A number of institutions, firms, and individuals want certain classes of publications as issued, and orders of this character are scheduled either for notification or shipment to be charged to deposit account.

Notice of publications.—Frequently, inquiries are made for publications not yet issued and it is our practice to prepare quotation cards which are sent out when publications are received.

The financial complications involved in accounting for the remittances from half a million customers annually may be appreciated by the fact that 148,961 checks were received during the year in payment of \$578,715.43, and 221 checks for \$711.74 were returned by the Treas-

ury as uncollectible. Subsequently the full amount, excepting \$1, was recovered by the Superintendent of Documents.

Another troublesome matter is the refunding of excessive remittances and unfilled orders. During the year the refunds amounted to \$49,467.60. The audited accounts for these transactions, including several thousand dollars of remittances in stamps, balanced to a penny.

The Public Printer charges the Superintendent of Documents with the cost of paper, presswork, and binding for all copies of publications printed for sale. To this charge the Superintendent of Documents is required by law to add 10 per cent in fixing his sale prices. During the fiscal year the Superintendent of Documents paid to the Public Printer the sum of \$520,759.25 for 8,467,506 copies of publications ordered printed for sale. The sales receipts during the year were sufficient to reimburse the Superintendent of Documents for the charges of the Public Printer and leave a surplus of \$215,745.67, which was deposited in the Treasury as miscellaneous receipts.

PREPARATION OF DOCUMENTS' CATALOGUES

Good progress has been made by the Superintendent of Documents' staff in the preparation of the catalogues and indexes of Government publications. The documents' catalogue of all Government publications issued during the Sixty-seventh Congress has been printed and is now being distributed. Copy for the documents' catalogue of the Sixty-eighth Congress will be completed about February 1, 1931, and the catalogue for the Sixty-ninth Congress will be ready for printing about July 1, 1931.

A continuance of the program for speeding up the publication of these voluminous catalogues will assure completion of those for the Seventieth and Seventy-first Congresses before it is possible to start work on the catalogue for the Seventy-second Congress.

Some idea of the immense amount of work involved in the preparation of one of these catalogues may be had from the 2,403 pages prepared from 52,955 cards, each containing from 1 to 4 entries, for the catalogue of the Sixty-seventh Congress.

In addition to the big biennial catalogues, the Documents Division also publishes 12 monthly catalogues, an annual index, and a session index of congressional documents. The consolidated index for the first and second sessions of the Seventy-first Congress is now being printed.

WEEKLY LIST OF UNITED STATES PUBLICATIONS

Another publication of increasing interest is the Weekly List of United States Government Publications, which was started July 11, 1928, by direction of the Public Printer. The popularity of the

weekly list is attested by the requests for copies which now total 7,931, going to all parts of the country and abroad.

The weekly lists have been found to be of special interest and value to librarians, many of whom clip the entries and paste them on cards for immediate use in their reference files. Commenting on the use of the weekly lists, the reference librarian of the Youngstown (Ohio) Public Library wrote in the *Library Journal* for November, 1930:

The Weekly List of United States Government Publications is the basis of a card file of statistical information, statistics being much in demand and often elusive. This file gives condensed information and sources for statistics of all sorts. The annotations in the Weekly List also contain much useful information, other than statistical, which we file by subject in our "ready reference" file.

The following commendation was received recently from Dr. George S. Godard, librarian of the Connecticut State Library at Hartford:

I think the Connecticut State Library with practically all of the other depository libraries appreciate the wonderful work which you and those associated with you have been doing in connection with the printing, binding, distribution, and making accessible of the official publications of our country. I do not think, however, that one out of ten thousand of those who use them appreciates the magnitude, the intricacies, and difficulties which are found in the several departments of the Government Printing Office, and are made so efficient by those in authority over the same.

NEW PLAN FOR DEPOSITORY DISTRIBUTION

To aid depository libraries in the selection of Government publications suitable for their communities the Superintendent of Documents is preparing a new classified list, which will contain only annual and periodical publications, with brief descriptions of their contents. It is proposed that the privilege of selecting publications in advance of printing will apply only to classes of publications where each issue is similar in character and for which the mailing list will be revised annually. Publications not included in the classified list will be made available to depository libraries by a weekly list for selection after they are printed.

The larger and more important libraries that have facilities to make all Government publications available for public use will not be required to submit selections if requests for the full number are approved by the Superintendent of Documents.

The proposed regulation of the selective privilege accords with the provision in the act of Congress approved June 6, 1930 (Public No. 311, 71st Cong., p. 19), that requests from depository libraries for Government publications "shall be subject to approval by the Superintendent of Documents." The law furthermore provides that no part

of the appropriation for depository library publications shall be used to supply them with any copies that are not requested by such libraries.

This legislation was brought about by the tremendous waste for years in sending copies of every Government publication to all depository libraries, regardless of their needs or facilities to store and make available for public use the increasing avalanche of Government publications that now fill at least 150 feet of shelf space annually.

CONSTRUCTION AND MAINTENANCE

The Division of Construction and Maintenance had the busiest year on record, carrying on a large increase of routine maintenance work in addition to extensive construction operations in the new building extension, the new Harding Hall, and the improvement in the cafeteria and recreation rooms.

The carpenter, electrical, machine, pipe-fitting, sheet metal, blacksmith, and buildings shops all rendered excellent service in this work, which is evidenced everywhere throughout the big building. A group of painters has also been kept busy with necessary repainting of the interior of the entire building. All these activities and the additional space intrusted to its care greatly increased the work of the sanitary section and its force of cleaners and laborers had to be enlarged.

The entire division now has 419 employees on its rolls in the various sections, including 71 whose services are temporary on account of the unusual amount of work in progress at present. A permanent increase of the force will be necessary, however, owing to the additional work in connection with the maintenance of the new building extension and plans for further improvements during the coming year. The division at the present time has 108 more employees than were on its roll at the beginning of the fiscal year 1930.

The carpenter and paint shop, with 34 employees in the fiscal year 1930, completed 15,679 repair jobs as well as having had a large amount of new work to do. Practically all of the woodwork in the building, including considerable cabinet and furniture construction, is done by the carpenter section. It deserves special praise for fine craftsmanship whenever called upon to render such service.

NEARLY 1,000 MACHINES IN OPERATION

In a manufacturing plant like the Government Printing Office, which operates nearly a thousand production machines, a competent and well-equipped machine shop is of vital importance.

The chief machinist reports a total of 60,479 jobs completed by his section during the year, including repairs, inspections, adjust-

ments, and new work. The extensive moving of machines and installation of new equipment to improve the efficiency of the production divisions have also added to the work of the machinists throughout the year.

The office is also indebted to the machine section for the development and installation of many devices for the improvement of machines and equipment in the production divisions.

The electrical section shared the burden of the extensive moving and installation of equipment during the year and handled 28,750 repairs, 6,100 inspection, and 230 new jobs. The section also rendered excellent service in the installation of the complicated lighting system in Harding Hall. Included in the work of the electrical section is the operation of 29 freight and passenger elevators.

The pipe and sheet-metal section, including plumbers, steam fitters, and sheet-metal workers, had a wide range of work during the year, especially in the maintenance and extension of the elaborate water, steam, air, ammonia, and gas lines throughout the plant, which united in a single line would extend a distance of approximately 115 miles.

The section has done a large amount of new construction work during the year. Mention has already been made of an especially commendable job in the construction of a form-washing machine for the pressroom, which was designed and built under the direction of the chief of the section.

Another duty of the chief pipe fitter is that of fire marshal in charge of fire-extinguishing apparatus which employees throughout the building are regularly drilled to operate for the protection of lives and property. During the year, 19 minor fires were extinguished by this service, and on only one occasion was it necessary to call the city department to stop a fire in the new extension. Little damage was done.

MANY IMPROVEMENTS IN POWER PLANT

The power section, which is a part of the Division of Construction and Maintenance, operates one of the best equipped and most efficient power plants in the Government service. All the electric current and steam for the operation of the Government Printing Office and the city post office is transmitted from the Capitol power plant through a reinforced concrete tunnel 7,014 feet in length.

The electric current is changed from alternating to direct by three 1,500-kilowatt synchronous converters in the Government Printing Office plant for the 1,600 direct-current motors which operate the production and other equipment. An additional synchronous converter of 500 kilowatts was transferred to this office from the Bureau of

Engraving and Printing to supplement the 1,500 kilowatt synchronous converters and also by inverted operation, to change a part of the direct current generated by the Diesel units to alternating current for equipment requiring such current.

The maximum load of electric current transmitted from the Capitol power plant during the fiscal year was 32,800 kilowatt-hours on October 30, 1929; and the maximum load used by the Government Printing Office was 24,592 kilowatt-hours on November 8, 1929. The minimum load was 1,219 kilowatt-hours on May 30, 1930, a holiday.

The unusually large production work of the office during the fiscal year 1930 is reflected in the increased use of electric current and steam. The total electric load for the year was 6,306,401 kilowatt-hours, an increase of nearly 15 per cent. Steam consumption amounted to 69,235,298 pounds, an increase of 14 per cent. On the other hand, gas consumption decreased slightly, with a total use of 8,489,600 cubic feet.

SUBMARINE ENGINES TO RENDER SERVICE

Due to unavoidable causes the operation of the two Diesel engines obtained from the Navy Department for stand-by service has been delayed, but it is expected to have one of these engines ready for service in a short time and the other soon after March 1, 1931.

The conversion of these engines from submarine to power-plant service has been a novel and unusual undertaking, and the success of the innovation will be due to the untiring efforts of Chief Engineer W. A. Browne of the Government Printing Office power section, under whose successful supervision that plant has been completely reequipped in recent years.

The two Diesel engines originally cost the Navy Department approximately \$300,000 but were not needed for further submarine service when the Public Printer secured their transfer to the Government Printing Office in September, 1928. The reconditioning and additional equipment of the engines, including many new parts, two 3,000-gallon fuel-oil tanks, and auxiliary air compressor, oil purifier, and pumps, have cost about \$40,000. In the reconditioning of the engines, city water pressure has been substituted for a power system of circulation, and the submarine equipment for the use of sea water has been eliminated. The engines, as reconstructed, will have a combined capacity of 800 kilowatts, which is deemed sufficient to provide Sunday, holiday, and emergency service for the Government Printing Office.

As the initial charge proposed by a commercial company for similar service at the time the engines were procured was approximately \$10,000 annually, it was estimated that the expenditure for

reequipping and installing the two Diesel engines would be fully compensated for in a few years.

The Government Printing Office is also protected in event of a shutdown of the Capitol power plant by a connection through that plant with the big power plant of the Navy Yard. During the fiscal year 1930 there were only four minor shutdowns of electric service, the maximum being for 13 minutes, due to trouble in the Capitol power plant.

COMPLETION OF MAIN BUILDING EXTENSION

The annual report of the Superintendent of Construction and Maintenance contains the following detailed information concerning the new extension to the main building of the Government Printing Office, which was recently completed at a cost of \$1,250,000 by allotment of that sum by the Public Buildings Commission:

The G Street extension to the main building contains 173,500 square feet of floor space. The main extension has eight stories and a basement; and the adjoining garage, a ground floor and basement for automobile storage and repair.

The front is a continuation of the main building and necessarily matches it in external design. The sides and back are of improved design providing larger and better windows.

The floors of the old main building and the new extension are at the same level and have communicating doors at all floors as well as bridge connections for the second, fourth, and fifth floors on the alley side.

The extension differs from the main building in the following respects: Bays between columns in the new extension are longer and wider, making the actual floor space per bay more than 25 per cent greater. Because of the large bays, heavy floor loads, and height of the building, it was necessary to use what is said to be the heaviest H-columns in the steel structure which had been produced by any steel mill up to the time of the design of this building.

Air and pipe shafts, toilets, and corridors in the new extension were arranged at both ends of the building so as to allow the largest possible continuous floor areas, whereas in the main building, shafts are scattered throughout the structure and halls, elevators, and toilets cut the floor areas into small units. The floor plan of the new extension therefore offers a decided improvement for the supervision and handling of work.

NOTEWORTHY INSTALLATION OF ELEVATORS

Elevators in the extension have several noteworthy features, the two high-speed passenger elevators having microleveling and automatically opening doors, which are a vast improvement over elevators in the main building. As compared with isolated elevators, the grouping together of three freight elevators improves service.

One of the three freight elevators will carry loads up to 20,000 pounds. In the old main building the greatest capacity available is 10,000 pounds. While the new extension has been in use only a few months, there has already been occasion to carry up one machine weighing 18,000 pounds and two machines weighing 16,000 pounds each.

Another elevator operating between the ground floor and the basement of the garage has a capacity of 32,000 pounds and is used to carry auto trucks loaded with paper to the basement for storage. It is the largest elevator in Washington.

An unusual conveyor system is being installed to carry books, small packages, and office papers in trays between the extension, the main building, and the old documents building. The trays are carried on vertical lifts and horizontal belts and are switched automatically to the designated station.

Communication by means of this system will be possible between the following points: Superintendent of Documents salesroom on the first floor of the new G Street extension and the stock rooms in the old building; also between the Superintendent of Accounts on the third floor of the main building and the eighth floor computing section and file room in the new extension.

BETTER LIGHT AND VENTILATION

The windows are of the awning type, pivoted at the top, swing outward at the bottom, and operate by means of a crank for each window. The operating mechanism is concealed in the window frames. The bottom section of each window is pivoted at the bottom, swings inward, and operates independently of the crank-operated sections. This window design is neat in appearance, is ideal for ventilation and for admitting light, and furthermore makes cleaning of both inside and outside of the windows possible by working from the inside of the building.

The floor slabs are concrete with 2-way reinforcement and are designed to carry uniformly distributed loads of 300 pounds per square foot. Wood-block flooring, 2½ inches thick, forms the wearing surface for main areas. Toilets and front hall have terrazzo flooring and division offices have standard maple flooring.

Excavation for the building was begun November 22, 1928, and the building turned over to the Public Printer by the Supervising Architect of the Treasury Department on August 20, 1930. The elevator installation and painting were not included in the original construction contracts, but were awarded to other firms in separate contracts. Elevators were completed September 29, 1930, and painting November 29, 1930.

BEGIN OCCUPANCY OF THE NEW EXTENSION

The following activities were in operation in the new extension on the dates indicated:

Apprentice section, August 8, 1930. Fourth floor.

Offset section, August 22, 1930. Fourth floor.

Computing section, September 15, 1930. Eighth floor.

Garage, October 4, 1930. Basement and first floor.

Pipe and sheet-metal section, October 28, 1930. Second floor.

Building section, October 29, 1930. Basement.

Photo-engraving section, November 15, 1930. Eighth floor.

The following additional units are to occupy the new building:

Basement—Buildings section and storage; occupied.

First floor—Maintenance stores and blacksmith shop (waiting for equipment).

Second floor—Office Superintendent of Construction and Maintenance (waiting for equipment now on order); carpenter shop (some new equipment required); Congressional Record press, under construction.

Third floor—Electrical shop (waiting for moving of fire-alarm and guard equipment now under contract); machine shop (some new equipment required).

Fourth floor—Offset and tabulating card presses and apprentice school; now occupied.

Fifth floor—Division of Tests and Technical Control, including ink, glue, and roller making (most of the equipment has already been installed).

Sixth floor—Superintendent of Documents (all desks delivered; waiting on filing equipment); Platemaking Division extension (machinery to be moved from main building).

Seventh floor—Superintendent of Documents library (awaiting installation of library stacks now under contract); Platemaking Division extension (new electrotyping generators and tanks now being installed).

Eighth floor—Computing and files section (new filing equipment required); photo-engraving camera room, now occupied.

COMMENDATION OF BUILDING SUPERVISION

The detailed work of preparing plans and specifications for the new extension and supervising the construction was done by the Office of the Supervising Architect of the Treasury Department under contracts awarded by the Secretary of the Treasury. The cooperation of the Supervising Architect and his staff is highly commendable. Special credit is due to Mr. William Y. Brady, Construction Engineer of the Supervising Architect's Office, who had supervision of the work from the breaking of ground to the completion of the building operation. His careful supervision and constant effort to serve the best interests of the Government Printing Office is greatly appreciated. The satisfactory completion of the big undertaking is a credit to all concerned.

The Public Printer is also pleased to commend the services in this connection of Mr. Alfred E. Hanson, Superintendent of Construction and Maintenance of the Government Printing Office, who ably assisted in preparing the plans for the extension and advised in its construction.

The new extension, with the addition of space by constructing balconies and bridging court-ways of the main building in recent years, has increased the floor space of the Government Printing Office to a total of 953,936 square feet and makes it the largest plant of its kind in the world.

On the recommendation of the Public Printer, Congress increased the authorization for machine purchases from \$200,000 to \$300,000 for the fiscal year beginning July 1, 1930, thus providing the Government Printing Office with funds for the procurement of a number of new and more efficient machines to replace obsolete equipment and to meet the requirements of increasing work.

NEW MACHINERY AND EQUIPMENT INSTALLED

Among the new machines and equipment thus purchased during the year are the following:

Presswork Division.—One 64-page web press for printing the Congressional Record and like classes of work to be installed in April, 1931, making 3 of this size replacing one 64-page and two 32-page obsolete presses; one 64-page web press for stereotype bookwork, now in operation; one 32-page web press for printing congressional speeches and similar classes of work, now in operation; 7 horizontal high-speed presses, 21 by 28 inches, making 9 of this design now in operation; 2 vertical high-speed presses for job work, 13 by 19 inches, making 6 of this design now in operation; 6 high-speed tabulating card presses, making 11 now in operation; 1 perfecting offset press, 38 by 52 inches, under construction; 1 perfecting press for Patent Office Gazette and bookwork, 43 by 56 inches, making 3 of this design now in operation; 2 cylinder presses, 29 by 42 inches, now in operation; 1 high-speed automatic envelope press, 6½ by 9½ inches, making 3 of this design now in operation; 18 automatic feeders for new presses and replacements, making a total of 108 automatic feeders now in operation.

Printing Division.—Thirty-four monotype casters, including 22 composing machines, 10 display machines, 1 material-making machine, and 1 supercaster, to replace old machines, making 130 of these machines now in operation, all with automatic metal feeders and electrically heated pots; ten 90-em monotype keyboards, making 100 keyboards now in operation; 2 proof presses for use with dry paper, designed by this office, now in operation; 1 portable router.

Bindery Division.—Four automatic paper cutters, making 55 cutters now in operation; 1 electrically heated and air-cooled gumming machine with 45-foot conveyor, now in operation; 1 continuous book trimmer, under construction; 1 index cutting machine; one 30-inch trimmer; 3 continuous wire stitchers, for replacement, now in operation; 1 book back-gluing machine, making 3 now in operation; one 42-inch slitting and rewinding machine, under construction; 1 stripping machine, under construction; 1 cloth-cutting machine, under construction; 1 self-adjusting roller book-backing machine.

Platemaking Division.—One automatic matrix molding and drying press, electrically heated, to produce 8 Record or 14 document pages at one operation; 3 combination roughing and shaving machines, replacing 8 obsolete machines; 2 automatic matrix-drying presses, pneumatically operated and electrically heated; 3 routers; 2 combination shaving, beveling, and trimming machines for Congressional Record and speeches, replacing 4 obsolete machines; 1 plate solid-

ifying and straightening press, under construction; 3 beveling and trimming machines; 1 combination saw and trimmer; 2 rubber-lined semiautomatic copper-depositing tanks, each 20 feet in length; 2 rubber-lined steel tanks for nickeling, each 62 inches in length; 1 starting tank for copper plates, 62 inches in length; 2 generators with 100 horsepower motors, 7,500 amperes; 2 centrifugal air compressors; 1 block trimmer; 1 cabinet saw; 1 planer; 1 etching machine; 1 squaring and stripping machine.

TECHNICAL TESTS AND RESEARCH

The Division of Tests and Technical Control, which was created eight years ago, continues to render excellent service in the routine testing of all materials used by this office to insure compliance with standard specifications. In the last fiscal year, 8,418 samples were tested, resulting in 383 rejections. Of these tests, 5,583 were paper samples selected from deliveries of approximately 52,000,000 pounds. Slightly over 5 per cent of the paper deliveries were rejected for noncompliance with specifications.

Another function of the division is the technical control of various materials and methods used for productive work and the manufacture by this office of printing and writing inks, press rollers, type and plate metals, bindery glues and paste. During the year this supervision was extended to include research into the materials and methods of stereotyping, electrotyping, and photo-engraving with a view to better standardization and efficiency in that work.

The Technical Director's detailed statement of the work of his division during the fiscal year 1930 is appended to this report.

COOPERATIVE WORK IN RESEARCH

Cooperative research work with the Employing Bookbinders of America and the American Newspaper Publishers' Association has progressed satisfactorily during the year. Each of these organizations employs a research associate to assist the Technical Director of the Government Printing Office in working out research problems of mutual interest.

Other branches of the printing industry have also consulted the Technical Director from time to time with special inquiries regarding research and have been given helpful assistance in accord with the Public Printer's policy to aid the industry in securing the benefits of the scientific research that the Government Printing Office has undertaken in recent years.

With the completion of its new laboratory, the Government Printing Office will have the best and most complete facilities available anywhere for printing research work. The laboratory and offices of the Technical Division, together with the ink and roller-

making sections under its supervision, will occupy an entire floor in the new building extension. Its present laboratory staff consists of 21 employees, including 14 chemists and chemist aides.

The national association of the Employing Bookbinders of America is issuing regular reports to members concerning the progress of its cooperative research work with the Government Printing Office. As a result of this work, the association of its own accord has adopted a special certificate for manufacturers of bindery materials who agree to label their goods in such manner that the quality of the goods is stated definitely. The manufacturers are permitted to use the association's approval label on all goods so marked. Certificates have already been issued to several manufacturers of genuine gold leaf and imitation gold or bronze leaf. Certificates will also be issued to manufacturers of book cloth, binders' board, and other bindery materials.

Among the problems under consideration with the national bookbinders' association are those relating to the warping of binders' boards, fading of inks, flexibility of glues, and the durability of brass dies. The Government Printing Office specifications for bindery glues were adopted by the association and published in its first research bulletin.

EMPLOYING BOOKBINDERS EXPRESS THANKS

In appreciation of this service, the Employing Bookbinders of America at their annual convention in Detroit last September unanimously adopted the following resolution:

Whereas Hon. George H. Carter, United States Public Printer, has, since the inception of our research work, evidenced a deep interest and enthusiasm in its progress; and

Whereas Mr. Carter's aid and assistance, which has been so generously offered and so frequently accepted, has been of immeasurable value to the research division and to the association: Therefore, be it

Resolved, That the Employing Bookbinders of America, in eleventh annual convention assembled, extends its sincere thanks to Mr. Carter for his interest, encouragement, and assistance; and be it further

Resolved, That a copy of this resolution be sent to Mr. Carter.

Research work with the American Newspaper Publishers' Association, through its mechanical department, has related thus far to newsprint paper and news ink with a view to determining the qualities which should be specified and controlled to obtain the best and most economical results in newspaper printing. A progress report covering this work was presented by the Technical Director at the annual meeting of the mechanical division in West Baden, Ind., last June.

Among the subjects that are to be investigated later in cooperation with the mechanical division of the American Newspaper

Publishers' Association and others are those relating to type metals, stereotype mats, electrotyping and photo-engraving processes, ink rollers, press lubricants and blankets, wiping cloths, and the standardization of machinery and other equipment, all of which are of interest not only to printers and newspaper publishers but also to the Government Printing Office.

Some of these subjects are to be discussed at the next meeting of the mechanical department of the American Newspaper Publishers' Association, which has accepted an invitation of the Public Printer to hold its June, 1931, session in Harding Hall of the Government Printing Office.

MECHANICAL ENGINEERS AID PRINTING RESEARCH

The American Society of Mechanical Engineers has a printing industries division which is also taking an active part in coordinating printing research and standardization work. The Public Printer, a member of the Society, is cooperating with the printing industries division as a member of its executive and survey committees. The Technical Director of the Government Printing Office is a member of the subcommittee on paper and pulp of the printing industries division.

The printing industries division of the American Society of Mechanical Engineers will hold its second conference of technical experts in the printing industry in Harding Hall on March 16 and 17, 1931, under the auspices of the United Typothetæ of America and the Government Printing Office. The first conference was held at Carnegie Institute of Technology, Pittsburgh, Pa., in November of 1929, and was attended by more than 200 engineers and printing experts of the United States and several other countries.

In line with the research work that has been undertaken by the Government Printing Office, the annual meeting of the American Society of Mechanical Engineers in New York on December 5, 1930, adopted the following resolution:

Whereas no standards for various types of equipment used in the many branches of the graphic arts have ever been adopted; and

Whereas the lack of concrete information as to the requirements of the industry has caused endless confusion and the creation of many equipment units for which there is little or no justification, as well as tremendous expense to manufacturers who have to service such equipment; and

Whereas it is obvious that better printing will result when all branches of the industry can cooperate in observing certain recognized standards: Therefore be it

Resolved, That we request the American Society of Mechanical Engineers to appoint a committee to investigate and report upon the need for standardization in the printing industry.

COOPERATIVE WORK OF TECHNICAL DIRECTOR

Cooperative research work is also being done by the Technical Director of the Government Printing Office with the Technical Association of the Pulp and Paper Industry, of which he is a member, and with the Lithographic Technical Foundation. The Technical Director is a member of the paper-testing committee of the Technical Association and chairman of its subcommittee on ink resistance of printing papers. He is also a member of the advisory committee on standardization of papers for the Lithographic Foundation.

In furtherance of its standardization work, the Government Printing Office has accepted an invitation to become a member of the American Standards Association composed of 43 national technical societies, trade associations, and governmental bodies, including the several departments of the United States Government. The major function of the American Standards Association is to provide means for arriving at national industrial standards. The Government Printing Office, of course, has a material interest in that endeavor and appreciates the privilege of cooperating with the Association in its projects for standardization through organized scientific research.

The United Typothetæ of America has expressed renewed interest in scientific research on behalf of the printing industry. Following a talk on this subject by the Public Printer at the fourth district Typothetæ federation meeting in Richmond, Va., on March 22, 1930, the federation adopted the following resolution recommending that consideration be given to the further development of research:

Whereas the Hon. George H. Carter, Public Printer, in his address before this convention, pointed out the need of research in the printing industry and emphasized the lost opportunities as a result thereof: Therefore be it

Resolved, That it is the sense of this convention that we recommend to the board of directors of the United Typothetæ of America that special consideration be given to the further development of research.

UNITED TYPOTHETÆ RECOMMENDS RESEARCH

The annual meeting of the United Typothetæ of America in Boston on October 17, 1930, adopted the following resolution recommending that prompt action be taken by its board of directors to carry on the work of scientific research under the direction of its committee on production engineering:

Whereas the need for increased efficiency in the conduct of the printing business is becoming more and more evident; and

Whereas the elements of efficient management include production engineering and scientific research, as well as sales, cost accounting and finance: Therefore be it

Resolved, That in accordance with a resolution passed on October 14, 1930, by the committee on production engineering, this forty-fourth annual conven-

tion recommends to the board of directors of the United Typothetæ of America that prompt action be taken as follows:

1. That the scope of the committee on production engineering be increased to include scientific research and the compiling and publishing of such data on these subjects as may be of interest to our members, and for that purpose all data in every department at headquarters is hereby made available.

2. That the personnel of the production engineering department be increased to enable it appropriately to carry on this work under the direction of the committee on production engineering.

3. That for its scientific research the committee on production engineering be empowered to use all facilities at headquarters that are now or may become available.

4. That in the preparation of the budget covering the activities of the coming year provision be made in the production engineering committee's quota sufficient to carry out the purposes of this resolution.

In accordance with the foregoing resolution, the board of directors of the United Typothetæ of America recently authorized its committee on production engineering to further investigate and report recommendations on the question of research.

TO CONTINUE STANDARDIZATION OF PAPER

The Boston meeting of the United Typothetæ of America revived interest in the standardization of paper grades, which it undertook several years ago in cooperation with the Government Printing Office.

A resolution was adopted directing the U. T. A. standardization committee, of which the Public Printer is a member, to continue its work. The action was taken notwithstanding a report of the committee on simplification and standardization of the American Pulp and Paper Association on February 17, 1930, that "standardization of grade of paper is impractical at this time." As a matter of fact, the Government Printing Office has successfully purchased all of its paper on standard specifications for many years.

The resolution of the United Typothetæ of America reads as follows:

Whereas the standardization committee of the United Typothetæ of America has expended much effort to accomplish the standardization of paper grades used in the printing and publishing industry: Therefore be it

Resolved, That the standardization committee of the United Typothetæ of America is hereby directed to continue its efforts respecting the standardization of paper grades used in the printing and publishing industry; and be it further

Resolved, That consideration be given to the subject of the standardization of paper samples to the end that the existing numerous sizes and shapes of such material be eliminated.

BRITISH PRINTING RESEARCH ASSOCIATION

The printing industries in other countries have shown keen interest in the application of science to their problems by organized research

work. Great Britain has set a timely example by the recent organization of the Printing Industry Research Association. The objects and membership of the British association as stated in a summary of its formal articles are as follows:

OBJECTS

(a) To arrange organized research toward the solution of problems encountered in the printing and allied industries.

(b) To undertake appropriate technical investigations in matters submitted by members of the Association.

(c) To collate and distribute amongst members information relating to development in processes, machinery, and materials applicable to the trades represented within the Association.

(d) To form a library of scientific reports on matters of interest to the membership.

(e) To arrange conferences and lectures to discuss technical matters of interest to the printing industry.

MEMBERSHIP

1. Ordinary members:

(a) Companies, firms, and individuals engaged in the printing and allied industries or in producing or dealing in requisites or accessories thereof.

(b) Trade associations of the printing and allied industries. Membership of a trade association, and also of a firm, is to be by a representative nominated by it. A company also to nominate a person as its representative. Ordinary members must, if individuals, be British subjects, or, if companies, incorporated in British Dominions and having a majority of their issued capital held by British subjects.

2. Honorary members, i. e., persons nominated for membership by the council for special cause, and elected at a general meeting: Honorary members have such privileges as may be determined by the council. They have no right of voting.

The articles of the British association have been drafted to meet the possibility of its taking advantage of the assistance that is given to research associations by the Department of Science and Industrial Research of the British Government and have been framed so as to follow the plan approved by that department and to meet the requirements made by it.

MEMBERSHIP OF THE BRITISH ASSOCIATION

The business of the Printing Industry Research Association is to be managed by a council with members nominated by the following trade associations:

The Worshipful Company of Stationers.

Newspaper Proprietors' Association (Ltd.).

The Federation of Master Printers and Allied Trades of Great Britain and Ireland.

The Periodical, Trade Press, and Weekly Newspaper Proprietors' Association (Ltd.).

The Master Bookbinders' Association.

The Electrotyping and Stereotyping Employers' Federation.

The Newspaper Society.

The Society of British Printing Ink Makers.

Paper Makers' Association of Great Britain and Ireland 1912 (Inc.).

The Printing and Kindred Trades Federation.

The Federation of Master Process Engravers.

The Right Hon. Lord Riddell, a foremost English publisher, was the chief promoter of the association, ably supported by Mr. J. R. Riddell, principal of the London School of Printing, and the latter's son, Dr. George L. Riddell, both of whom made an intensive study of the research work of the Government Printing Office during their visits to the United States in 1929 and 1930. Doctor Riddell, an outstanding authority on printing research in England, has been appointed technical director of the new association.

LORD RIDDELL SENDS HIS CONGRATULATIONS

Lord Riddell has likewise taken a great interest in the research work of the United States Government Printing Office and prior to the organization of the British association requested a number of copies of the Public Printer's reports for distribution among his associate publishers in England. In thanking the Public Printer for the reports, Lord Riddell expressed the following appreciation:

May I congratulate you on the report—extremely well done. I am writing an article more or less on the subject, copy of which I will send you in a few days. Meanwhile, again allow me to thank you for your kindness. This is the sort of parity which tends to real friendship between Britain and America.

During a visit to London last summer, the Public Printer was invited to attend a meeting of the committee which proposed the Printing Industry Research Association and was privileged to hear the final discussion on the adoption of its articles of organization. It was gratifying to hear the kindly references which members of the committee made to the research work of the United States Government Printing Office.

The London Master Bookbinders' Association also invited the Public Printer to a round-table talk on the subject of research as it affects the bookbinding industry in the United States and England. Other conferences were held with officers of the Federation of Master Printers of Great Britain and Ireland, who are taking an active part in the Printing Industry Research Association.

REPORT OF THE BRITISH LIBRARY ASSOCIATION

A special committee of the British Library Association has recently made a thorough study of the durability of book papers in consultation with other interested bodies, including the United States

Government Printing Office, with a view to formulating specifications for paper of absolute and relative permanence. In its valuable report, the committee makes the following reference to a conference which the Public Printer and the former Technical Director of the United States Government Printing Office had with its members while in London last year:

A particularly fruitful interchange of views took place in regard to practice in America. The Hon. George H. Carter and Mr. E. O. Reed, both of the United States Government Printing Office, Washington, met the committee on May 13, 1929, when the committee understood that the United States Government possessed statutory authority to formulate standards of quality for the benefit of manufacturers and the public, as well as to examine and appraise submissions purporting to conform to such standards. The Government Printing Office was working in close collaboration with the United Typothetæ of America and other organizations; a laboratory had been established eight years ago. Specifications had been in use for some years for 100 per cent rag book paper for Government publications, where maximum serviceability and permanence were essential, and within the last two years these requirements had become much more rigid, both as to rag furnished and as to rosin sizing and acidity. The rag bond and ledger papers purchased by the Government had to be watermarked with a symbol indicating the grades of paper. There were four grades of bond and ledger papers each watermarked with the American eagle, together with four stars (••••) for 100 per cent rag, three (***) for 75 per cent rag, two (**) for 50 per cent rag, and one (*) for 30 per cent rag furnish. The specifications were in harmony with good commercial practice.

The foregoing comments of the British committee in regard to the paper specifications of the United States Government Printing Office are quite accurate except as to the "statutory authority of the United States Government to formulate standards of quality for the benefit of manufacturers and the public." The authority to formulate standards relates only to paper for the United States Government and does not apply to the grading or testing of paper for commercial or public use. However, a number of American paper manufacturers have adopted the Government Printing Office standards for several grades of their products and their use is becoming more general.

It is interesting to note that the British committee recommends a system of watermarks for its three proposed grades of durable paper somewhat on the American pattern as cited above. The report of the committee also concludes that it is of fundamental importance to establish a recognized testing station with a laboratory to determine the absolute or relative permanence of commercial papers.

STANDARDS COMMITTEE ORGANIZED IN GERMANY

In Germany, a Standards Committee for the Graphic Arts (Normenausschuss für das Graphische Gewerbe, briefly called "Nagra") has been organized to standardize paper, printing inks, type, and

machinery for the printing industry of that country. This standardization, of course, will be based on scientific research as a necessary preliminary.

Standards of paper sizes ("normals") have already been adopted in Germany and are being used by a number of other countries. The master printers of Holland have established "normal" (standard) sizes for their products.

Standard testing methods for printing inks have been set up by the German committee, which aims to standardize printing inks, particularly for color work, on the basis of these testing methods, taking into consideration the ingredients and shades of colors.

Other German standards include type cabinets and cases, proof-readers' marks, composing sticks, galleys, chases, locking-up devices, press-roller diameters, and cylinder packing. It is proposed also to develop a German standard printing press.

INTERNATIONAL BUREAU OF MASTER PRINTERS

Another organization to recognize the importance of scientific research and standardization is the International Bureau of Federations of Master Printers. The bureau was organized during the past year in compliance with a resolution adopted by the International Congress of Master Printers at its London meeting, which the Public Printer attended in 1929. Its membership at present includes the federations of master printers of Great Britain, Germany, Sweden, Belgium, and Switzerland, whose representatives constitute the council of administration.

One of the main objects of the international bureau, according to its by-laws, is the standardization of type, paper, machinery, and inks, and the investigation of new printing materials, inventions, and technical processes.

On account of mutual interest in research and standardization for the printing industry, the United States Government Printing Office has established friendly relations with the International Bureau through a visit which the Public Printer made last summer to its headquarters in Berlin and conferences with its representatives in Germany, England, and Sweden.

CONFERENCES WITH OTHER GOVERNMENT PRINTERS

Conferences were also held with the Government printers in Great Britain, Germany, Sweden, Finland, Poland, and other European countries for the consideration of problems of common interest to Government printing works. The information thus obtained has

been especially helpful in the improvement of the United States Government Printing Office, and it is hoped that some benefit has also been derived by the printers to other countries. In any event, all expressed appreciation of the research work which this office is doing and of its offer to cooperate with them in further efforts to secure standardization of printing materials and equipment.

CONTACT WITH PRINTERS IN MANY COUNTRIES

The United States Government Printing Office has maintained other contacts by correspondence with prominent representatives of the printing industries in many countries. During the year, letters of inquiry concerning the work of the United States Government Printing Office have been received from South Africa, India, Japan, China, Germany, Sweden, Holland, France, England, Australia, New Zealand, Argentina, and the Soviet Republics.

The following are typical examples of the letters received during the year—

From Maj. J. J. Kruger, Government Printer of the Union of South Africa, Pretoria:

Allow me to congratulate you on your excellent and instructive annual report. I have read the document with keen interest and propose to study it in detail in the near future.

I am making every effort to follow in your footsteps and hope soon to inaugurate a small research section in this office.

Again congratulations on your efforts in behalf of our industry and with kindest regards.

From Mr. Philip H. Prior, of the Aylesford Paper Mills, England:

Now, I have returned, I should like to thank you for the courtesy extended to me by yourself and your staff while at Washington. I think your organization is a splendid argument against the usual statement that the state-run institutions can not be run as efficiently as ordinary commercial ones.

CONGRATULATIONS ON PROGRESS IN RESEARCH

In this connection, the following quotation from a letter of Mr. J. Homer Winkler, formerly a research associate at the Bureau of Standards for the International Association of Electrotypers of America and now with the Ace Electrotype Co. of Cleveland, is of interest:

The annual report of the Public Printer for the year 1929 is a very creditable document. The Public Printer is to be congratulated for the progress he has achieved in the Government Printing Office through the application of scientific principles and technical control.

Since this report contains so much information of general interest to anyone engaged in the printing industry, I would appreciate very much receiving a copy of it.

APPRENTICE SCHOOL

The Apprentice School completed the eighth year of its training courses in the Government Printing Office with the graduation of a class of 60 members on June 4, 1930. Several hundred guests of the graduates attended the formal exercises in Harding Hall and enjoyed the program, which had all the features of a college commencement.

The address was delivered by Hon. Merlin Hull, a Member of Congress from Wisconsin and a former printer-employee of the Government Printing Office. Mr. Hull was presented by the Deputy Public Printer, Mr. John Greene, who as "dean" of the school acted as chairman for the evening. Rev. James Shera Montgomery, D. D., Chaplain of the United States House of Representatives, offered the invocation. The musical part of the program was the contribution of the Government Printing Office orchestra.

At the conclusion of the exercises, a diploma certifying his qualifications for appointment as journeyman in the Government Printing Office was presented to each graduate with the congratulations of the Public Printer.

All the members of the class of 1930 remained in the service of the Government Printing Office, and 30 of the 60 graduates are now holding responsible positions at preferred rates of pay.

In commemoration of the occasion, the class of 1930 printed an unusually attractive brochure, "Apprentice Ships," which reproduced the mural lunettes in the Library of Congress depicting the evolution of the graphic arts from the stone age to the invention of printing, together with a reprinted page of the Gutenberg Bible. The souvenir also contained pictures of each member of the class with his office record, a list of class officers, and the commencement program. Copies of the brochure have been much treasured as notable examples of artistic printing.

APPRENTICE POSTERS ARE ACCORDED HONOR

Another highly creditable job of printing executed by the Apprentice School during the year was the preparation of a group of posters for the Nation-wide School of Printing Exhibition by the National Education Association. Twenty-seven apprentices submitted posters of their own design and printing for the exhibition.

The Government school was accorded the honor of being included among the five selected as the best of the many printing schools throughout the country that participated in the contest.

The poster designed by Robert W. Pearson of the Government Printing Office school received the special honor of being reproduced in the Journal of the National Education Association as one of the six posters selected for the highest excellence.

Mr. Joy Elmer Morgan, editor of the *Journal of the National Education Association*, expressed the following tribute to the Government Printing Office school for its fine poster work:

Kindly accept our heartiest congratulations upon these examples of splendid workmanship under your direction. Will you also convey to the apprentices themselves our appreciation of their interest and cooperation? I believe this is one of the very best sets of posters, and certainly the most varied, that we have received from any institution. * * * These posters are an expression of fine school ideals and spirit.

The Government School of Apprentices also received special mention for the excellence of the posters which it submitted in the 1929 nation-wide printing project of the National Education Association.

ROUTINE WORK OF APPRENTICE SCHOOL

Routine work accredited to apprentices during the year in connection with their schoolroom training and assistance in the various production divisions included the setting of 123,106,900 ems of type, 168,946 hours of service in other operations of the Printing Division, 62,286 hours in the Bindery Division, 28,652 hours in the Presswork Division, 13,205 hours in the Platemaking Division, and 1,615 hours in the machine section. This work was done by a daily average of 166 apprentices on the rolls during the year.

In addition to their technical training, apprentices are required to pursue studies that will be of benefit to them in their vocation. Many apprentices attended night public schools during the year. To teach apprentices how to spell, special lessons were given throughout the year in that almost lost art. As a result, the school has developed a number of remarkably good spellers. During the year, 38 apprentices maintained an average of between 90 and 94 per cent and 24 had an average of between 95 and 99. Several obtained perfect marks in their weekly lessons for a period of more than three months.

The increasing popularity of the Apprentice School is shown by the fact that 1,687 applications were filed with the Civil Service Commission for the entrance examination during the summer of 1930. Of this number, 1,408 took the examination, which required the equivalent of an eighth grade education, and 542 qualified for appointment.

As the school is limited by law to 200 apprentices at any one time, an average of only 50 appointments can be made annually for the 4-year courses. However, owing to the few appointments since the graduation last June, it was possible to select 73 from the large list of eligibles, and they will report for duty during the present month.

3,479 APPLICANTS IN EIGHT YEARS

Since the establishment of the Apprentice School on July 5, 1922, the number of applicants has totaled 3,479, of whom 1,513 succeeded in passing the civil-service examinations. During the eight years up to July 1, 1930, 409 appointments were made, and 178 completed the 4-year course of training. Almost all of the graduates have continued on the rolls of the Government Printing Office in their respective trades, and 54 of them are now holding preferred positions, with salaries ranging from \$2,754 to \$3,200 per year.

In appreciation of the opportunities that have been accorded the apprentices to learn useful trades in the Government Printing Office, the presidents of the four classes that have been graduated thus far presented the following statement to the Public Printer:

WASHINGTON, D. C., *December 22, 1930.*

HON. GEORGE H. CARTER,

Public Printer, Government Printing Office,

Washington, D. C.

DEAR SIR: Through your recommendation to Congress to reestablish a School of Apprentices in the United States Government Printing Office, you have given to the young men of the country interested in such work an opportunity to learn a trade that will be a lasting benefit to them.

We, as representatives of the graduate apprentices, wish to assure you that we appreciate the fact that by your sincere efforts we are now enrolled in the largest printing establishment in the world.

We find at the completion of our apprenticeship that we have received an education which has equipped us for our life's work. The knowledge gained during our four years in the Apprentice School has enabled us to take a place in our respective trades, and it has been said that the graduate apprentices "are among the best qualified and most industrious journeymen in the office." During our period of instruction we found conditions most agreeable, and we wish to thank you for the course you have taken in reorganizing this school.

We feel a debt of gratitude to you, and we wish to express the hope that this opportunity, which has been granted by no other Government official, will continue to be extended to the youth of our country.

Again assuring you that we appreciate your efforts in our behalf, and thanking you for the opportunity you have afforded us, we wish you a Merry Christmas and Happy New Year.

Most sincerely yours,

HENRY E. MATHENY.

J. W. BIGGERS, Jr.

FRANKLIN R. HORSTMAN.

JOSEPH C. HARVEY.

The class which was graduated on April 18, 1929, presented an engrossed copy of the following resolution of appreciation, signed by the 47 members of that class:

Whereas it has been our privilege to serve our apprenticeship and receive instruction in our respective trades in the Government Printing Office, and

Whereas this opportunity to equip ourselves for our chosen vocation has been afforded us through the efforts of the Hon. George H. Carter, Public Printer: Therefore be it

Resolved, by the graduating apprentice class of 1928, that we herewith express our appreciation and tender our thanks to Public Printer Carter for the opportunity thus afforded us and for his warm personal interest in our success.

GOOD WILL GREETINGS FROM APPRENTICES

Another and more recent token of the good will of the apprentices is the following Christmas greeting which they printed in holiday spirit and presented to the Public Printer with their best wishes:

Merry Christmas. May the stocking hung before your chimney mantel be filled with all the good things you deserve.

We have had a good year and appreciate the many kindnesses we have received at your hands.

Our lot as apprentices has been happier because you have taken an interest in our welfare and helped us over some of the rough places during the year.

We want to thank you and wish for you a Merry Christmas and joy and prosperity in the New Year we are entering.

THE APPRENTICES.

U. S. GOVERNMENT PRINTING OFFICE,

December 25, 1930.

It is evident, therefore, that the apprentices of the Government Printing Office are a happy and a fortunate lot, with a far brighter future than awaits the average American boy. As a matter of fact, the graduates of the Government School of Apprentices have better prospects in life than the average college graduate or the favored sons of Annapolis and West Point.

HEALTH AND SANITATION

The health of employees and sanitation of the office were well cared for during the year by the Medical and Sanitary Director in charge of the Emergency Hospital staff of an assistant director and three graduate nurses. Treatments for injuries and illness totaled 16,036, an increase of 1,585 over the preceding year. Of this number, 4,513 treatments were for minor injuries, including 1,501 for injuries received outside the office. In these cases surgical care enabled the employees to remain on duty and do efficient work. The medical treatments numbered 6,704, an increase of 514 for the year.

Included in these figures are the treatments given 199 employees of the city post office, which is permitted to use the facilities of the Government Printing Office hospital when other medical services are not available.

Twenty claims due to time lost on account of injuries were allowed by the United States Employees' Compensation Commission.

During the year 3,948 employees were excused on account of illness or illness in family, with a resultant loss of 17,345 days of employment, a decrease of 2,653 days compared to the time lost in the preceding year.

TESTS MADE OF EMPLOYEES' EYESIGHT

In the hope of improving the vision of employees the Medical Director undertook an examination of the eyesight of every employee on the rolls of the office in April, 1930. The tests included 4,429 employees. Of this number, 787 were found to have defective vision. Since the examination, practically all of the employees whose vision could be corrected by glasses have complied with the suggestion of the Medical Director and have expressed themselves as pleased with the results.

It is proposed to conduct such examinations regularly hereafter, as the correction of vision will be of benefit not only to the employees themselves but will also increase their efficiency, good eyesight being an essential requirement in the work of the Government Printing Office.

During the year, 1,221 other physical examinations were made to determine the condition of new employees, fitness of others for duty, and their eligibility for retirement.

The Medical and Sanitary Director also has charge of the sanitation of the entire plant with full authority over its cleanliness and the safeguarding of employees. It is likewise his duty to make regular inspections of the cafeteria and to examine the condition of all foodstuffs so as to insure wholesome service at all times. The cleanliness of the workrooms is a matter of special pride to the Government Printing Office.

WORKING CONDITIONS GREATLY IMPROVED

The annual report of the Medical and Sanitary Director concludes with the following statement of present conditions in the Government Printing Office:

At the beginning of the present administration of the Government Printing Office a movement was placed into action to improve the working conditions of the employees. To-day we have a clean, wholesome place to work, good ventilation, good light, a good place to eat, a wonderful recreation hall (second to none anywhere); a new addition to our building will soon be ready for occupancy; this will provide room for those of our employees who, for lack of space, have been employed in the old building.

Our people are well housed, our workrooms are clean, light and ventilation are good, we provide our employees with the best food obtainable, constant vigilance is maintained against fire, safety devices are used to prevent accidents. Our people are well taken care of; they are happy, efficient, and contented.

RETIREMENTS

There were 81 retirements of employees during the fiscal year 1930, of which 61 were on account of age and 20 for disability. All of these employees are receiving annuities in accordance with the retirement law. The total retirements from August 20, 1920, when the law became effective, to July 1, 1930, were 886. In the six months from July 1, 1930, to December 31, 1930, there were 120 additional retirements, of which 47 were by operation of the law limiting extensions of service to four years beyond the retirement age of 65 for mechanics and 70 for clerks.

The total contributions of Government Printing Office employees to the Federal retirement fund up to July 1, 1930, amounted to \$2,034,715.78, of which \$316,931.91 was deducted from their wages and salaries for the fiscal year 1930 at the rate of 3½ per cent.

In the Annual Report of the Public Printer for 1929 recommendation was made for increasing the maximum annuity of retired employees from \$1,000 to at least \$1,200 a year. It is pleasing to note that the new retirement act of May 29, 1930, increases the maximum annuity to \$1,200 for all retired employees who have the required qualifications. The new law also gives employees the option of retiring within 2 years of the regular retirement age after 30 years of service, thus permitting many employees to retire at the age of 63.

In accordance with the recommendation of the Public Printer, Congress also amended the retirement law to authorize further extensions to certain employees whose services for more than four years beyond their regular retirement age would be advantageous to the Government on account of long experience and special knowledge. The new retirement law provides—

where the head of the department or establishment certifies, and the Civil Service Commission agrees, that by reason of expert knowledge and special qualifications the continuance of the employee would be advantageous to the public service, further extensions of two years may be granted.

RULING OF CIVIL SERVICE COMMISSION

Unfortunately, however, the Civil Service Commission has interpreted the law so that it is really of little or no benefit to the Government Printing Office. Although the wording of the continuance provision follows almost exactly the recommendation submitted by the Public Printer to the House Committee on the Civil Service, which drafted the legislation, the Civil Service Commission in recent decisions has made the provision inapplicable to employees of the Government Printing Office.

In its rulings the Civil Service Commission holds that—the special continuance provision of the retirement act was designed to apply to those few Government employees whose knowledge and qualifications are such that the loss of their services would be seriously felt by the public interests.

The two cases submitted to the commission by the Public Printer were those of employees whose expert knowledge and special qualifications fully justified their retention as advantageous to the public service, but the commission disregarded this fact, asserting:

The automatic separation of employees of this character under the provision of the retirement act should be regarded as a very small part of the annual turnover which must be accepted and paid for by training newly assigned employees, unless the main purpose of the retirement legislation is to be defeated. The separation of a faithful, efficient employee at any age, unless his efficiency is impaired, is a loss to the Government, but it is a loss that must be borne in order to secure relief from superannuation.

The president of the Civil Service Commission has been publicly quoted as citing “a scientist or technical employee engaged upon important research or organization work” as an example for the application of the special continuance provision of the new retirement act. In the opinion of the Public Printer, such an interpretation of the law will deny its special benefits to skilled craftsmen employed in the Government Printing Office notwithstanding the fact that their expert knowledge and special qualifications entitle them to the same consideration as the employees of other departments of the Government.

MESSANGER IS FAVORED OVER CRAFTSMAN

The Civil Service Commission has not been consistent, however, in its intention to apply the continuance provision only to high-brow positions. At the request of the Secretary of State, soon after the law became effective, the commission waived its ruling in favor of a messenger in the State Department. In explanation of this exception, the secretary of the commission stated that the action was taken after the Secretary of State had personally appeared before the commission and presented reasons showing that his office would be seriously embarrassed by the loss of the messenger's services during the diplomatic year on account of his personal acquaintance with diplomatic representatives of foreign governments which is not shared to the same degree by other employees of the State Department.

It is evident, therefore, that the Civil Service Commission considers the “expert knowledge and special qualifications” of a State Department messenger as more “advantageous to the public service” than the expert knowledge and special qualifications of one of the most skillful wood-carvers and cabinetmakers in the country whose

service in the Government Printing Office was ended by the arbitrary ruling of the commission.

By a special provision in the legislative appropriation act effective July 1, 1930, Congress approved the recommendation of the Public Printer that he be authorized to continue the employment of Mr. W. A. (Andy) Smith, Congressional Record Clerk at the Capitol, notwithstanding the age limitation of the retirement act. Mr. Smith's notable service at the Capitol for more than 52 years entitled him to this recognition of his continued efficiency, but his retention would not have been possible under the retirement act as interpreted by the Civil Service Commission.

HALF HOLIDAYS AND LEAVE

On recommendation of the Public Printer, the Senate bill providing Saturday half holidays throughout the year for certain Government employees was amended by the House Committee on the Civil Service to include employees of the Government Printing Office. This bill is now on the House Calendar with a favorable report awaiting further action.

As stated in the Annual Report for 1929, the Public Printer is heartily in favor of a 5½-workday week for employees of the Government Printing Office. A special bill granting them the half holiday has been pending in Congress for several years and for that reason the Government Printing Office was not included in the general Saturday half-holiday bill as passed by the Senate at the last session. With this legislation under way, it then seemed more practical to have the Government Printing Office included with other establishments in the general half-holiday bill, and an appropriate amendment was submitted to the House Committee on the Civil Service.

The report of that committee to the House on May 16, 1930, contains the following statement in regard to including the Government Printing Office in the Saturday half-holiday bill (S. 471):

Employees of the Government Printing Office are included in the provisions of the bill, although legislation affecting this branch of the Government service does not ordinarily come before the Committee on the Civil Service. This action was taken in view of a statement made under date of February 11, 1930, by the Public Printer to S. M. Lee, clerk of the Committee on Printing of the United States Senate, which read in part as follows:

"I respectfully recommend that your committee propose an amendment to the Jones bill (S. 471), which is now on the Senate Calendar (No. 70), striking out the words 'and the Government Printing Office' from line 9, page 1, of the bill. The elimination of those words would make the Jones bill, providing for a 44-hour week, applicable to the Government Printing Office as well as to other Government employees."

PROVISIONS OF SATURDAY HALF HOLIDAY BILL

The bill (S. 471), which had been pending on the House Calendar since May 16, 1930, provides that four hours, exclusive of time for luncheon, shall constitute a day's work on Saturday throughout the year for practically all civil employees in the Federal service. Employees whose services can not be spared on Saturday afternoons are entitled to an equal shortening of the workday on some other day.

For several years, Saturday half holidays have been granted during the four summer months by order of the President. In addition, employees are allowed by law 30 days' leave of absence and every legal holiday, making in all about 45 nonworking days each year on full pay. A weekly half holiday throughout the year would increase the time off with pay to 63 days annually. Employees of the executive departments are also allowed by law 30 days' sick leave annually, but this privilege does not apply to employees of the Government Printing Office.

APPOINTMENTS AND SEPARATIONS FOR YEAR

During the fiscal year ended June 30, 1930, there were 587 appointments to positions in the Government Printing Office, and 355 separations from the service, including 81 retirements. The net increase for the year was 232, which brought the total enrollment on June 30, 1930, up to 4,419 employees.

From July 1 to December 31, 1930, inclusive, 643 additional appointments were made, with 235 separations, the net increase for the last six months being 408 employees. The total enrollment on December 31, 1930, was 4,827 employees, or 640 more than on July 30, 1929. Approximately 155 further appointments are pending, including 73 apprentices, which will bring the net increase of employees since the beginning of the fiscal year 1930 to 795. The increase in printers during that period was 249.

ENTIRE OFFICE HAS 986 WOMEN EMPLOYEES

Of the 4,827 employees on the rolls December 31, 1930, 986 were women engaged in various clerical and mechanical duties. A number are employed in the Printing Division as compositors, proofreaders, and linotype and monotype keyboard operators. Several women have been assigned to highly responsible positions in this office during the present administration. For the first time in its history, a woman Assistant to the Public Printer has been placed in special charge of the interests of women employees. The Public Documents Division with 315 employees has a woman Assistant Superintendent, and another is in charge of the bindery machine-sewing section.

CAFETERIA AND RECREATION

With a 20 per cent increase in patronage, notwithstanding the handicap of building alterations, the cafeteria, operated by an association of employees, had the most successful year since its establishment in 1922. During the year ended October 20, 1930, the cafeteria served a total of 982,220 meals, an increase of 167,325 over the preceding year. The daily average was 3,070 customers, with a new record of 4,276 on a special day when surplus funds were used to provide a turkey dinner for 25 cents a plate. At this meal 2,630 pounds of turkey and 400 pies were consumed, in addition to other foodstuffs in similar quantities.

The total receipts of the cafeteria for the year amounted to \$266,292.20, from which were paid the wages and salaries of its 63 employees, the cost of all the foodstuffs, and replacements of equipment, as well as the various entertainments provided for employees during the year. The expenditure for dishes and other table equipment amounted to \$2,130.92. The association also paid approximately \$5,500 for special furnishings in Harding Hall, including the draperies and stage equipment.

ANNUAL EXCURSION ENJOYED BY EMPLOYEES

The annual excursion, given under the auspices of the association, was attended by 1,800 employees and their families, who greatly enjoyed a day of outdoor sports at Chapel Point on the Potomac River.

The expenses of a number of other activities were financed in whole or in part by the association, such as three baseball teams, bowling tournaments, the office orchestra of 30 members, and the newly organized chorus.

Other activities of the association in connection with Harding Hall are stated elsewhere in this report.

The president of the Cafeteria and Recreation Association concluded his report for the year with the following statement:

On behalf of the Government Printing Office Cafeteria and Recreation Association I wish to extend to the Public Printer sincere appreciation of his kind thoughtfulness of the employees of the Government Printing Office through the establishment of these activities, his keen interest in keeping them thoroughly modern, and his efforts to always give the employees the very best.

GENEROUS SUBSCRIPTIONS TO RELIEF FUNDS

In view of the urgent appeals for relief funds, employees of the Government Printing Office were more than usually generous in their response to the American Red Cross roll call for 1931. The total subscriptions amounted to \$2,614.15, ranking third in the list of sums contributed by the Government departments and establishments in

Washington. On the basis of per capita subscriptions, the employees of the Government Printing Office took first place in the 1931 roll call. The liberal response was highly commended by the District director of the Red Cross.

WAR VETERANS

Generous assistance was also given during the year to the Veterans of Foreign Wars in their annual sale of "buddy poppies" and to the American War Mothers in their sale of carnations for Mother's Day.

Employees have been encouraged to enlist in the National Guard and to attend citizens' military training camps. War veterans have likewise been allowed to take whatever leave they desire to attend their annual reunions.

In appreciation of this service, the United States Marine Corps awarded the following certificate to the Public Printer in 1930:

The United States Marine Corps much appreciates your practical contribution to national preparedness by the sacrifice of your business interests in granting leave to your employees to attend the annual training of the United States Marine Corps Reserve.

W. C. NEVILLE,
*Major General Commandant,
United States Marine Corps.*

War veterans have also been encouraged to organize two units of the United Veterans of American Wars, which have a total membership of 357 in the Government Printing Office.

The Government Printing Office is proud to have 737 war veterans on its rolls, a number of whom hold highly responsible positions with great credit to themselves and to the Government. Of this number, 641 are veterans of the World War, which is almost double the number of employees who left the service of the Government Printing Office to join the armed forces of the United States in 1917 and 1918. There are also 96 Spanish-American War veterans in the office, 13 of whom likewise served in the World War.

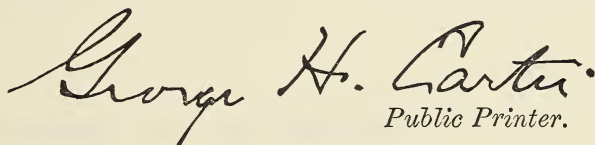
LAST OF THE CIVIL WAR VETERANS

Established as it was at the beginning of the Civil War, the Government Printing Office has been the home of soldiers and veterans ever since the tragic days when several hundred of its employees enlisted to aid in the defense of the National Capital. The last of the hundreds of Civil War veterans employed in the Government Printing Office retired a few years ago. The distinction of being the last Civil War veteran employed in this office, of the few now living, belongs to Capt. Samuel G. Mawson, past department commander of the Grand Army of the Republic and of the United Spanish War Veterans in the District of Columbia.

It seems fitting, therefore, to close this report with an expression of heartfelt thanks to Captain Mawson and his faithful comrades whose loyalty made it possible for the Government Printing Office to function throughout the Civil and Spanish Wars and to be of still greater service during the World War and the succeeding years of peace.

Under authority of the act approved June 6, 1930 (Public, No. 311, 71st Cong.), the Public Printer has discontinued the printing of such other and additional reports for the fiscal year ended June 30, 1930, as have usually been submitted to Congress concerning the business of the Government Printing Office. The original copies of such reports will be kept on file in the office of the Public Printer for public inspection, as provided for in said act.

Respectfully submitted.


Public Printer.

DIVISION OF ACCOUNTS
STATISTICAL TABLES

STATISTICAL TABLES

COMPILED BY THE SUPERINTENDENT OF ACCOUNTS AND BUDGET OFFICER

TABLE 1.—Resources and liabilities under appropriations for the fiscal year ended June 30, 1930

RESOURCES		
Appropriation for working capital.....	\$2, 500, 000. 00	
Deficiency act Mar. 26, 1930.....	3, 600. 00	
Payments from all sources for printing and binding.....	11, 004, 572. 01	
Refunds and receipts from various sources.....	202. 06	
Bills receivable July 1, 1930, for printing and binding furnished.....	592, 427. 99	
		\$14, 100, 802. 06
Appropriations for salaries, office of Superintendent of Documents.....	524, 000. 00	
Appropriation for general expenses, office of Superintendent of Documents.....	195, 000. 00	
Equipment for Government Printing Office Building.....	200, 000. 00	
Total resources available for fiscal year 1930.....		\$15, 019, 802. 06
LIABILITIES		
Working capital and repayments for printing and binding:		
Disbursed to June 30, 1930.....	\$12, 720, 295. 35	
Outstanding obligations July 1, 1930.....	1, 281, 829. 13	
Total disbursed and outstanding obligations.....		\$14, 002, 124. 48
Salaries, office of Superintendent of Documents:		
Disbursed to June 30, 1930.....	478, 543. 43	
Outstanding obligations July 1, 1930.....	22, 000. 00	
Total disbursed and outstanding obligations.....		500, 543. 43
General expenses, office of Superintendent of Documents:		
Disbursed to June 30, 1930.....	126, 075. 63	
Outstanding obligations July 1, 1930.....	65, 924. 37	
Total disbursed and outstanding obligations.....		192, 000. 00
Appropriation, equipment for Government Printing Office Building (no obligations to June 30, 1930):		
Total disbursed to June 30, 1930.....	13, 324, 914. 41	
Total outstanding obligations July 1, 1930.....	1, 369, 753. 50	
Total disbursed and outstanding obligations.....		14, 694, 667. 91
Unobligated balance (subject to 10 per cent over or under on outstanding orders).....		¹ 325, 134. 15
Total.....		15, 019, 802. 06

TABLE 2.—Summary of financial transactions in fiscal year ended June 30, 1930, covering appropriations for fiscal years 1928, 1929, and 1930

APPROPRIATION FOR 1928

	Resources	Disbursements	Unexpended balance July 1, 1930
Public printing and binding:			
Unexpended balance July 1, 1929.....	\$578, 201. 53		
Credits to appropriations by payments from all sources for printing and binding and other receipts from miscellaneous sources.....	223. 11		
Disbursed for material and supplies.....		\$8, 898. 04	
Total.....	578, 424. 64	8, 898. 04	\$569, 526. 60
Salaries, office of Superintendent of Documents: Unexpended balance July 1, 1929.....	14, 854. 00		14, 854. 00
General expenses, office of Superintendent of Documents:			
Unexpended balance July 1, 1929.....	25, 948. 48		
Disbursed.....		17, 381. 98	
Total.....	25, 948. 48	17, 381. 98	8, 566. 50
Grand total appropriation.....	619, 227. 12	26, 280. 02	592, 947. 10
Unobligated balance of 1929 appropriation on June 30, 1930.....			592, 947. 10

¹ Includes \$200,000 for equipment for Government Printing Office Building, all of which becomes a continuing appropriation in 1931.

TABLE 2.—Summary of financial transactions in fiscal year ended June 30, 1930, covering appropriations for fiscal years 1928, 1929, and 1930—Continued

APPROPRIATION FOR 1929

	Resources	Disbursements	Unexpended balance July 1, 1930
Public printing and binding:			
Unexpended balance July 1, 1929.....	\$658,466.30	-----	-----
Credits to appropriations by payments from all sources for printing and binding and other receipts from miscellaneous sources.....	919,895.71	-----	-----
Disbursed for labor.....	-----	\$319,405.93	-----
Disbursed for paper.....	-----	565,250.93	-----
Disbursed for lithographing and engraving.....	-----	60,274.30	-----
Disbursed for material and supplies.....	-----	174,980.55	-----
Total.....	1,578,362.01	1,119,911.71	\$458,450.30
Salaries, office of Superintendent of Documents—			
Unexpended balance July 1, 1929.....	40,793.72	-----	-----
Disbursed.....	-----	18,140.96	-----
Total.....	40,793.72	18,140.96	22,652.76
General expenses, office of Superintendent of Documents—			
Unexpended balance July 1, 1929.....	80,193.39	-----	-----
Disbursed.....	-----	79,390.74	-----
Total.....	80,193.39	79,390.74	802.65
Grand total appropriation.....	1,699,349.12	1,217,443.41	481,905.71
Deduct for outstanding obligations.....	-----	-----	73,644.73
Unobligated balance of 1929 appropriation on June 30, 1930.....	-----	-----	408,260.98

APPROPRIATION FOR 1930

Public printing and binding:			
Legislative act of Feb. 28, 1929.....	\$2,500,000.00	-----	-----
Deficiency act of Mar. 26, 1930.....	3,600.00	-----	-----
Credits to appropriations by payments from all sources for printing and binding and other receipts from miscellaneous sources.....	11,004,774.07	-----	-----
Disbursed for labor.....	-----	\$8,806,976.09	-----
Disbursed for paper.....	-----	2,643,753.43	-----
Disbursed for lithographing and engraving.....	-----	98,934.35	-----
Disbursed for material and supplies.....	-----	1,110,631.48	-----
Total.....	13,508,374.07	12,720,295.35	\$788,078.72
Equipment, Government Printing Office Building.....	200,000.00	-----	200,000.00
Salaries, office of Superintendent of Documents:			
Legislative act of Feb. 28, 1929.....	524,000.00	-----	-----
Disbursed.....	-----	478,543.43	-----
Total.....	524,000.00	478,543.43	45,456.57
General expenses, office of Superintendent of Documents:			
Legislative act of Feb. 28, 1929.....	195,000.00	-----	-----
Disbursed.....	-----	126,075.63	-----
Total.....	195,000.00	126,075.63	68,924.37
Grand total appropriation.....	14,427,374.07	13,324,914.41	1,102,459.66
Bills receivable.....	-----	-----	592,427.99
Total.....	-----	-----	1,694,887.65
Deduct for outstanding obligations.....	-----	-----	1,370,753.50
Unobligated balance of 1930 appropriations on June 30, 1930.....	-----	-----	¹ 324,134.15
Total unobligated balances (subject to change by 10 per cent over and under on outstanding obligations):			
1928.....	-----	-----	592,947.10
1929.....	-----	-----	408,260.98
1930.....	-----	-----	¹ 324,134.15
Total.....	-----	-----	1,325,342.23

¹ Includes \$200,000 for equipment for Government Printing Office Building, all of which becomes a continuing appropriation in 1931.

TABLE 2.—Summary of financial transactions in fiscal year ended June 30, 1930, covering appropriations for fiscal years 1928, 1929, and 1930—Continued

RECAPITULATION—ALL APPROPRIATIONS

Total paid for labor.....	¹ \$9, 186, 382. 02
Total paid for material and supplies.....	1, 294, 510. 07
Total paid for lithographing and engraving.....	159, 208. 65
Total paid for paper.....	3, 209, 004. 36
Total paid for printing and binding.....	13, 849, 105. 10
Total paid for salaries, office of Superintendent of Documents.....	² 496, 684. 39
Total paid for general expenses, office of Superintendent of Documents.....	222, 848. 35
Grand total.....	14, 508, 637. 84

TABLE 3.—Moneys received during fiscal year 1930, the source and Treasury deposit

1928

Deposited to the credit of appropriation for public printing and binding:		
For miscellaneous printing and binding.....	\$219. 67	
Refunds.....	3. 44	
Total.....		\$223. 11

1929

Deposited to the credit of appropriation for public printing and binding:		
For printing and binding for departments and bureaus.....	897, 308. 78	
For miscellaneous printing and binding.....	21, 831. 04	
Refunds.....	735. 14	
Auditor's disallowance.....	20. 75	
Total.....		919, 895. 71

1930

Deposited to the credit of appropriation for public printing and binding:		
For printing and binding for departments and bureaus.....	10, 931, 683. 03	
For miscellaneous printing and binding.....	72, 888. 98	
Refunds.....	196. 25	
Auditor's disallowance.....	5. 81	
Total.....		11, 004, 774. 07
Deposited to miscellaneous receipts:		
Sale of waste paper.....	63, 753. 51	
Sale of waste metal.....	4, 788. 92	
Sale of waste wood.....	686. 84	
Sale of waste gold.....	1, 003. 85	
Sale of condemned material.....	453. 28	
Sale of documents.....	215, 745. 67	
Total.....		286, 432. 07
Grand total.....		12, 211, 324. 96

¹ Includes amount paid to retirement fund..... \$300, 179. 72

² Includes amount paid to retirement fund..... 16, 752. 19

Total paid to retirement fund..... 316, 931. 91

TABLE 4.—*Production of principal items entering into printing and binding in fiscal years 1928, 1929, 1930*

Item	1928	1929	1930
Main office and Congressional Library branch:			
Total charges for printing and binding.....dollars	12, 370, 146. 63	12, 715, 330. 80	¹ 14,996, 520. 25
Jackets written.....number	58, 900	58, 860	62, 303
Estimates made.....do	52, 149	54, 269	55, 033
Bills computed.....do	74, 489	75, 919	78, 999
Total ems set.....do	2, 101, 301, 000	2, 226, 741, 000	2, 473, 567, 100
Time-work in composing sections.....hours	248, 765	251, 514	258, 299
Electrotype and stereotype.....square inches	10, 345, 015	10, 820, 451	12, 448, 269
Postal cards printed.....number	1, 726, 524, 392	1, 820, 181, 228	1, 731, 266, 760
Money-order books shipped.....do	1, 005, 265	1, 040, 807	1, 055, 312
Forms sent to press.....do	161, 615	153, 427	173, 742
Actual impressions.....do	496, 693, 620	512, 438, 770	586, 530, 941
Chargeable impressions.....do	1, 936, 225, 940	2, 225, 320, 830	2, 364, 948, 413
Sheets folded.....do	378, 427, 584	378, 361, 054	452, 673, 407
Signatures gathered.....do	159, 165, 884	154, 190, 077	159, 676, 789
Tips made.....do	24, 638, 033	22, 179, 086	29, 420, 080
Copies wire stitched.....do	46, 989, 822	45, 017, 756	51, 738, 999
Copies paper covered.....do	10, 593, 833	10, 547, 504	12, 638, 296
Books and pamphlets trimmed.....do	47, 548, 337	44, 992, 890	56, 041, 685
Books rounded and backed.....do	1, 357, 951	1, 308, 867	1, 724, 386
Books marbled and edged.....do	294, 394	457, 659	510, 703
Stamping impressions.....do	2, 861, 897	2, 743, 084	3, 424, 186
Books cased in.....do	1, 626, 978	1, 668, 704	2, 143, 025
Indexes cut.....do	130, 011	195, 664	294, 670
Sheets passed through ruling machine.....do	22, 867, 419	26, 869, 442	34, 997, 757
Signatures sewed.....do	61, 087, 869	58, 600, 715	66, 015, 602
Copies punched and drilled.....do	135, 559, 178	148, 993, 935	161, 098, 129
Sheets and lines perforated.....do	8, 111, 287	8, 189, 768	13, 147, 042
Tablets made.....do	2, 928, 330	3, 573, 051	3, 972, 821
Miscellaneous rebindings, etc.....do	90, 221	93, 376	98, 963

¹ Includes \$900,000 estimated labor and material on uncompleted jobs.

TABLE 5.—Charges for work and to whom delivered during the fiscal year ended June 30, 1930

Congress.....	\$2, 499, 510. 50
Work ordered by Members of Congress:	
Miscellaneous charges.....	694. 35
Documents, reports, bills, etc.....	10, 882. 90
Speeches.....	67, 368. 88
Private orders for electrotypes.....	58. 65
Superintendent of Documents.....	741, 539. 45
State.....	233, 045. 67
Treasury.....	891, 427. 02
War.....	634, 224. 53
Navy.....	792, 405. 44
Interior.....	231, 389. 29
Geological Survey.....	164, 416. 28
Smithsonian Institution.....	97, 860. 86
Justice.....	264, 647. 18
Post Office.....	2, 114, 610. 44
Agriculture.....	1, 014, 610. 10
Commerce.....	1, 381, 368. 92
Patent Office.....	1, 191, 228. 24
Labor.....	279, 013. 84
Library of Congress.....	384, 841. 42
White House.....	3, 689. 33
Pan American Union.....	36, 738. 09
Supreme Court:	
District of Columbia.....	3, 724. 19
United States.....	2, 960. 17
Court of Claims.....	33, 439. 34
Interstate Commerce Commission.....	230, 571. 10
Civil Service Commission.....	62, 791. 70
Geographic Board.....	358. 94
General Accounting Office.....	76, 759. 48
Alien Property Custodian.....	2, 418. 32
Bureau of the Budget.....	26, 945. 92
District of Columbia.....	106, 270. 65
Employees' Compensation Commission.....	10, 398. 34
Federal Reserve Board.....	39, 621. 31
Federal Board for Vocational Education.....	10, 822. 62
Federal Trade Commission.....	29, 729. 42
National Advisory Committee for Aeronautics.....	23, 692. 33
Panama Canal.....	51, 045. 59
Railroad Administration.....	509. 49
Board of Mediation.....	1, 181. 62
Shipping Board.....	47, 965. 33
Tariff Commission.....	14, 984. 11
Veterans' Bureau.....	173, 635. 93
War Finance Corporation.....	294. 58
Public Buildings and Public Parks.....	4, 289. 72
Arlington Memorial Bridge Commission.....	374. 00
American Battle Monuments Commission.....	3, 170. 30
Bureau of Efficiency.....	552. 72
Commission of Fine Arts.....	1, 735. 37
Federal Power Commission.....	3, 238. 34
National Forest Reservation Commission.....	303. 04
National Home for Disabled Volunteer Soldiers.....	2, 165. 56
Special counsel, oil leases.....	16. 62
Board of Tax Appeals.....	40, 667. 06
National Capital Park and Planning Commission.....	1, 475. 43
Inland Waterways Commission.....	561. 92
Two Hundredth Anniversary of George Washington's Birthday.....	744. 05
Federal Radio Commission.....	9, 808. 44
Pan American Sanitary Bureau.....	14, 476. 29
War Claims Arbitrator.....	408. 01
George Rogers Clark Sesquicentennial Commission.....	380. 83
Personnel Classification Board.....	8, 111. 18
National Commission on Law Observance and Enforcement.....	270. 09
National Academy of Sciences.....	130. 05
American Samoan Commission.....	14. 17
Pulaski Sesquicentennial Commission.....	12. 98
Federal Farm Board.....	17, 919. 22
Total.....	14, 096, 520. 25

TABLE 7.—Itemized statement of the classes and cost of work delivered during the fiscal year ended June 30, 1930

Kind or description of work	Number of copies	Number of type pages	Charge for composing, room work except author's alterations	Charge for author's alterations	Charge for electrotyping or stereotyping	Charge for pressroom work	Charge for bindery work	Charge for illustrations or engravings	Charge for paper	Charge for rush and over-time work	Charge for miscellaneous items	Total charge
Letterheads, noteheads, and envelopes.....	118, 052, 666	-----	\$25, 540. 54	\$75. 74	\$2, 084. 08	\$63, 955. 47	\$14, 235. 14	\$10, 553. 02	\$94, 309. 23	\$189. 64	\$298. 36	\$211, 541. 82
Embossed letterheads, noteheads, and envelopes.....	1, 618, 850	-----	44. 15	-----	-----	5, 006. 86	422. 10	-----	5, 021. 83	20. 29	136. 02	10, 651. 25
Blanks, notices, schedules, cards, etc.....	3, 652, 174, 274	-----	400, 447. 73	23, 133. 80	40, 850. 19	476, 959. 49	438, 555. 29	10, 319. 29	1, 435, 945. 49	6, 368. 38	424, 814. 56	3, 257, 394. 22
Blank books, with patent backs, etc.....	1, 874	-----	7, 961. 25	580. 63	243. 91	2, 010. 36	20, 223. 59	-----	2, 780. 70	35. 23	2. 34	33, 838. 01
Blank books without patent backs.....	3, 246, 744	-----	13, 485. 53	288. 99	3, 799. 62	62, 328. 82	324, 651. 34	6. 47	103, 802. 29	1. 58	4, 712. 98	513, 077. 62
Binding newspapers, documents, reports, etc.....	98, 253	-----	-----	-----	-----	-----	361, 497. 06	-----	-----	134. 73	-----	361, 631. 79
Loose-leaf and other patent binders, etc.....	293	-----	4. 85	1. 28	-----	5. 23	380. 39	-----	5. 93	-----	423. 52	821. 20
Publications smaller than octavo.....	7, 555, 484	18, 951	40, 799. 57	4, 840. 13	4, 349. 57	16, 750. 57	56, 636. 26	4, 350. 35	22, 440. 59	619. 26	37. 88	150, 424. 18
Octavo publications.....	80, 479, 226	741, 891	1, 751, 219. 58	124, 954. 78	108, 134. 74	336, 045. 22	634, 423. 52	245, 920. 24	432, 515. 13	119, 367. 84	525. 28	3, 813, 106. 33
Royal octavo publications.....	1, 626, 319	56, 261	31, 132	197, 758. 92	14, 937. 55	10, 917. 14	28, 462. 66	45, 250. 12	25, 771. 64	12, 678. 08	1, 631. 05	344, 181. 28
Quarto publications.....	5, 424, 465	144, 339	388, 775. 88	26, 432. 35	23, 284. 90	66, 502. 34	104, 768. 33	22, 278. 81	80, 140. 64	14, 300. 36	-----	726, 503. 70
Miscellaneous publications.....	11, 032, 283	981, 709	46, 656. 45	1, 125. 66	2, 476. 88	78, 811. 58	280, 940. 62	19, 507. 09	149, 362. 71	1, 100. 77	75, 326. 32	655, 307. 78
General miscellaneous charges.....	-----	-----	98, 734. 19	7, 539. 78	11, 954. 75	9, 102. 03	277, 019. 36	13, 840. 07	174, 621. 82	890. 95	838, 788. 70	932, 541. 65
Congressional Record for year.....	7, 221, 552	23, 239	225, 151. 20	2, 735. 18	45, 667. 28	68, 659. 98	194, 866. 30	44. 53	78, 780. 78	142, 798. 69	-----	758, 693. 94
Bills, resolutions, and amendments (as introduced and reprints on requisitions).....	8, 859, 918	83, 548	231, 094. 58	577. 13	8. 75	78, 161. 26	20, 119. 59	-----	11, 429. 37	109, 943. 59	-----	451, 334. 27
Specifications of patents, trademarks, etc.....	6, 268, 248	176, 047	844, 331. 95	9, 259. 05	2. 63	78, 306. 86	4, 639. 92	19. 49	13, 864. 11	-----	-----	950, 424. 01
Official Gazette, Patent Office.	271, 728	13, 641	130, 924. 89	65. 16	-----	20, 001. 67	20, 066. 38	14, 849. 90	20, 120. 93	-----	-----	205, 068. 93
Blank paper and supplies.....	-----	-----	-----	-----	-----	-----	566, 198. 39	-----	566, 198. 39	-----	152, 879. 88	719, 078. 27
Total.....	3, 903, 932, 177	2, 239, 626	4, 402, 931. 26	216, 607. 21	313, 774. 83	1, 391, 070. 40	2, 798, 235. 31	848, 763. 38	3, 217, 111. 58	106, 449. 39	576. 89	14, 096, 520. 25

TABLE 8.—*Inventory of quantity and cost of paper and envelopes, material and supplies, and machinery and equipment on hand June 30, 1930*

Description	Sheets	Pounds	Cost
Paper and envelopes:			
Printing.....	11, 082, 000		\$104, 092. 86
Do.....		1, 331, 000	61, 453. 85
Mimeograph.....	9, 366, 000		48, 750. 49
United States money-order writing.....		99, 000	8, 343. 00
Safety writing.....	154, 000		1, 025. 43
Writing.....	7, 590, 000		40, 496. 51
Do.....		320, 000	16, 984. 06
Map.....	366, 000		7, 583. 93
Manifold.....	7, 897, 000		41, 180. 36
Bond.....	18, 550, 000		186, 427. 56
Ledger.....	3, 395, 000		63, 131. 54
Index.....	759, 000		22, 517. 90
Cover.....	1, 385, 000		24, 516. 45
Manila.....	831, 000		3, 162. 28
Do.....		221, 000	11, 413. 40
Kraft.....	1, 914, 000		13, 154. 80
Do.....		111, 000	4, 234. 65
Manila tag board.....	509, 000		9, 538. 80
Do.....		188, 000	14, 070. 40
Cardboard.....	165, 000		4, 567. 36
Bristol board.....	370, 000		3, 418. 80
Do.....		267, 000	12, 271. 87
Miscellaneous.....	1, 675, 000		11, 236. 13
Do.....		15, 000	1, 067. 80
Binders board.....		501, 250	15, 990. 95
Envelopes.....			15, 305. 66
Total, paper and envelopes.....			745, 936. 84
Other material and supplies:			
Miscellaneous supplies.....			184, 251. 39
Book cloth.....			27, 005. 99
Ink ingredients.....			10, 207. 63
Ink (made in Government Printing Office).....			3, 118. 19
Leather.....			9, 663. 81
Total, material and supplies.....			234, 247. 01
Total, material and supplies, paper and envelopes.....			980, 183. 85
Machinery and equipment.....			4, 594, 831. 47
Grand total.....			5, 575, 015. 32

TABLE 9.—*Publications, including annual reports and documents, printed on requisition during the fiscal year ended June 30, 1930, for Congress and Government departments and independent establishments*

[Does not include speeches, private orders, or court briefs]		Copies
Agriculture.....	36,734,846	
War.....	10,182,750	
Superintendent of Documents.....	10,077,992	
Commerce.....	8,360,570	
Congress.....	4,910,630	
State.....	865,306	
Treasury.....	3,254,695	
Navy.....	2,338,925	
Interior.....	1,995,614	
Justice.....	78,931	
Post Office.....	2,017,276	
Labor.....	1,815,450	
Smithsonian Institution.....	144,833	
Library of Congress.....	169,332	
Executive Office.....	24,196	
Pan American Union.....	207,691	
Supreme Court:		
District of Columbia.....	774	
United States.....	170	
Court of Claims.....	5,047	
Bureau of Efficiency.....	1,114	
Federal Power Commission.....	4,134	
Interstate Commerce Commission.....	1,665,826	
Civil Service Commission.....	169,588	
Geographic Board.....	12,950	
General Accounting Office.....	11,992	
Alien Property Custodian.....	2,492	
District of Columbia.....	252,136	
Employees' Compensation Commission.....	104,552	
Veterans' Bureau.....	510,914	
Federal Board for Vocational Education.....	100,091	
Federal Reserve Board.....	442,596	
Federal Trade Commission.....	113,182	
National Advisory Committee for Aeronautics.....	46,630	
Panama Canal.....	2,491	
Railroad Administration.....	1,031	
Shipping Board.....	396,869	
Tariff Commission.....	16,436	
Board of Mediation.....	5,552	
War Finance Corporation.....	500	
Bureau of the Budget.....	6,623	
Public Buildings and Public Parks.....	564	
Board of Tax Appeals.....	13,541	
Pan American Sanitary Bureau.....	74,625	
Federal Radio Commission.....	5,292	
Inland Waterways Corporation.....	3,501	
National Capital Park and Planning Commission.....	1,600	
Federal Farm Board.....	924,620	
Personnel Classification Board.....	1,000	
Miscellaneous.....	20,769	
Total.....	88,098,239	

TABLE 10.—*Receipts from miscellaneous sales during the fiscal year ended June 30, 1930*

Condemned material, machinery, etc.....	\$453.28
Waste wood.....	686.84
Waste metal.....	4,788.92
Waste paper.....	63,753.51
Waste gold.....	1,003.85
Total.....	70,686.40

DIVISION OF TESTS AND TECHNICAL CONTROL
REPORT OF THE TECHNICAL DIRECTOR

REPORT OF THE TECHNICAL DIRECTOR

To the PUBLIC PRINTER:

The following is the report of the Division of Tests and Technical Control for the fiscal year ended June 30, 1930:

The total number of samples tested during the year was 8,418, an increase of 10.9 per cent over the number tested last year. Following is a tabulation of the various materials tested during the fiscal years 1929 and 1930:

	1929	1930
Paper.....	4,800	5,583
Textiles.....	750	700
Bookbinding leather.....	87	91
Metals.....	1,134	1,119
Glue.....	51	36
Ink-making materials.....	349	214
Inks.....		86
Oils and greases.....	50	39
Gasoline.....	72	76
Chemicals.....	79	109
Miscellaneous.....	219	365
Total.....	7,591	8,418

Three hundred and eighty-three deliveries of materials were rejected for noncompliance with specifications. Of these rejections 224 were of paper, 68 of envelopes, the remainder being miscellaneous materials.

PAPER

The total net amount of paper received by the office during the year was 51,993,802 pounds or 12.75 per cent more than last year. Of this amount 2,735,438 pounds were rejected for noncompliance with specifications. The 1930 rejections amounted to 5.26 per cent as compared with 4.1 per cent for last year.

KRAFT PAPER

The research program on kraft paper mentioned in last year's report has been extended to cover additional tests. The work is now completed and will be published shortly as a technical bulletin of the office. Considerable interest in this work has been expressed by manufacturers, jobbers, and consumers.

TABULATING CARDS

Close technical supervision over the paper used in printing tabulating cards has been maintained during the year. The cards are fully equal to those furnished by the tabulating machine companies.

An auxiliary attachment for printing colored identification stripes on tabulating cards was designed in the laboratory and built in the

machine shop. This attachment prints narrow colored stripes on the cards without interfering with production. Numerous shades of inks for stripes have been developed to meet the requirements of the different Government departments.

PASSPORT PAPER

With the cooperation of a paper company which had furnished a considerable amount of passport paper, an entirely different grade of paper has been developed. The new passport paper is very sensitive to mechanical erasure.

The following letter authorizing the change to the new paper was received from the Assistant Secretary of State under date of January 18, 1930:

I have received your letter of January 14, inclosing for approval new specifications for passport paper drawn up to procure paper possessing physical characteristics better adapted for the prevention and detection of alterations and forgeries. The use of this new paper will increase the cost of each passport three-tenths of 1 cent.

I am glad to approve the use of the new paper at an increased cost of three-tenths of 1 cent on each passport, and I should like to add that I greatly appreciate your interest and cooperation in this matter.

DETERMINATION OF PAPER ACIDITY

The Government was the pioneer in adopting definite acidity specifications for paper intended for permanent record use. The Government specifications for the year beginning March 1, 1929, carried acidity limits for two grades of paper—100 per cent rag book and 100 per cent rag ledger—with a total estimated purchase of 240,000 pounds. In the specifications for the year beginning March 1, 1930, the acidity regulations were extended to cover 11 grades of paper, including practically all the 100 per cent, some of the 50 per cent rag papers, and one chemical wood paper. The estimated quantity to be purchased for the year is 2,500,000 pounds.

Due to the fact that numerous procedures have been recommended for the determination of acidity in paper as expressed by pH values and also by total acidity, concordant results are not always obtained by different laboratories. It was apparent that further research covering methods for the determination of pH values and total acidity on paper was desirable, and in fact essential, to their application to paper specifications.

A research program was therefore instituted in which the Bureau of Standards, the Bureau of Chemistry and Soils, and the Government Printing Office are cooperating.

A preliminary report on the work was presented by the Technical Director at the annual meeting of the Technical Association of the Pulp and Paper Industry in New York, in February, 1930. This report has been published in bulletin form and is available for distribution.

REJECTIONS OF ENVELOPES

Envelopes purchased by the office during the year totaled 51,196,089, an increase of 10,420,229, or 25.5 per cent, over last year. Of these 8,357,250 were rejected. The greater portion of the rejections

were kraft envelopes for low folding endurance. The rejections amounted to 16.3 per cent as compared with 5.18 per cent last year.

WARPING OF BOOK COVERS

Considerable warping of book covers made from No. 2 quality binders board was experienced during the year. As a result, best quality board was substituted for No. 2 board in most instances. In the meantime research has been continued to determine the cause of warping of binders board and means for prevention. This work is being conducted in cooperation with the Employing Bookbinders of America and the Binders Board Manufacturers Association under the research associate plan.

It was found that if the boards were rosin-sized and of the specified density, the warping was materially reduced. This was apparently due to the reduced absorption of water by the boards. Bending tests on unsized No. 2 quality boards showed that when the boards were moistened on one side, their resistance to bending decreased approximately 10 per cent. When moistened on both sides the decrease was approximately 20 per cent.

The stiffness of the boards as well as their water resistance affects the tendency to warp. One sample tested was an asphalt-impregnated board which was practically unaffected by water. This board was very flexible and warped badly when used.

Based on the assumption that decreasing the amount of water absorbed by the boards in the casing-in process would aid in the prevention of warping, practical tests were made on several adhesives, among which were glue, stabilized rubber latex, and rubber dispersions. All these adhesives contain much less water than flour paste and were found to give excellent results with respect to preventing warping, but none could be used satisfactorily in the casing-in machines. It was apparent, therefore, that a modification of the machines would be necessary unless an adhesive was developed which could be used without machine changes.

Efforts were accordingly made to develop a paste which would contain a much smaller percentage of water than that commonly used for casing-in. Flour paste contains 85 to 90 per cent water and, due to its low surface tension, piles up on the end-paper in ridges instead of a smooth layer. These ridges of paste carry a considerable amount of water in suspension, the major portion of which must be absorbed by the binders board.

Numerous formulas were tried out and finally a paste was developed which gives all indications of being satisfactory. The modified paste, in addition to containing but slightly more than half as much water as ordinary paste, has a considerably higher surface tension. This permits the spreading of a very thin layer on the end-sheet, thus further cutting down the amount of water to be absorbed by the binders board.

Tests made so far indicate that the use of this or a similar paste in connection with properly sized boards will practically eliminate the warping of No. 2 quality boards.

Further tests will be made during the winter when atmospheric conditions are such as to cause excessive warping. The results of the work will be published in bulletin form as soon as completed.

TYPE METALS

During the fiscal year 1930 a total of 8,736,107 pounds of type metals were standardized for the use of the office, an increase of 716,894 pounds, or 8.9 per cent more than in the fiscal year 1929. The amounts of the various alloys standardized during the fiscal years 1929 and 1930 are given below:

Kind of metal	1929	1930	Increase	Increase
	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Per cent</i>
Linotype.....	5,184,345	5,719,035	534,690	10.31
Monotype.....	2,189,734	2,461,059	271,325	12.39
Stereotype.....	388,870	489,118	100,248	25.77
Electrotype.....	256,264	66,895	¹ 189,369	¹ 73.90
Total.....	8,019,213	8,736,107	716,894	² 8.94

¹ Decrease.² Average.

Following is a detailed tabulation showing the correction of linotype, monotype, stereotype, and electrotype metals for the fiscal year 1930. These data include the quantity returned for remelting, correction metals, dross, percentage increase due to correction, and percentage loss due to dross, calculated on the quantity of metal remelted:

	Metal			
	Linotype	Monotype	Stereotype	Electrotype
Returned for remelting.....pounds..	5,639,038	2,460,623	434,253	37,597
Correction metal used:				
Lead-antimony alloy ¹do....	17,845	10,860	4,235	2,235
Tin-antimony alloy ²do....	28,850	20,460	-----	-----
Tin.....do....	15	1,334	1,360	-----
Lead.....do....	89,650	2,370	30,375	27,165
Total correction metal used.....do....	107,510	43,414	56,430	29,400
Total corrected metal.....do....	5,719,035	2,461,059	489,118	66,895
Dross.....do....	27,513	42,978	1,565	102
Increase due to correction.....per cent..	1.90	1.76	12.99	78.19
Dross.....do....	.48	1.74	.36	.27

¹ Lead-antimony alloy consists of approximately 60 per cent lead and 40 per cent antimony.

² Tin-antimony alloy consists of approximately 33 per cent tin and 67 per cent antimony.

The percentages of dross in linotype and monotype metals were 0.48 and 1.74, respectively, as compared with 0.79 and 2.23 last year. The decrease is due to the use of the dross renovator mentioned in last year's report. The percentage will be even lower in the future since the equipment is now in regular use. The renovator was in use for only part of the fiscal year 1930.

The following table shows the amount of dross treated and the amount of metal recovered during five months' operation:

Month	Linotype					Monotype				
	Original dross	Recovered metal	Recovered metal	Final dross	Final dross	Original dross	Recovered metal	Recovered metal	Final dross	Final dross
1929										
November.....	<i>Lbs.</i> 2,931	<i>Lbs.</i> 1,191	<i>Per cent</i> 40.63	<i>Lbs.</i> 1,740	<i>Per cent</i> 0.39	<i>Lbs.</i> 4,400	<i>Lbs.</i> 1,928	<i>Per cent</i> 43.81	<i>Lbs.</i> 2,472	<i>Per cent</i> 1.30
December.....	2,961	1,311	44.27	1,650	.45	4,600	2,159	46.93	2,441	1.43
1930										
January.....	3,049	1,291	42.34	1,758	.33	4,920	2,262	45.97	2,658	1.33
February.....	2,941	1,432	48.69	1,509	.32	5,400	2,697	49.94	2,703	1.21
March.....	3,396	1,820	53.59	1,576	.28	7,209	3,596	49.88	3,613	1.31
Average.....	3,056	1,409	46.11	1,647	.35	5,306	2,528	47.64	2,777	1.32

The following table shows the difference in composition of the linotype and monotype metals and the metals recovered from the dross in each case. The analyses of recovered metals were made on composite lots of approximately 1,500 pounds each, and can therefore be considered as representative:

	Linotype metal		Monotype metal	
	Government Printing Office standard formula	Metal recovered from dross	Government Printing Office standard formula	Metal recovered from dross
Tin.....	<i>Per cent</i> 4.0-4.5	<i>Per cent</i> 3.55	<i>Per cent</i> 7.3	<i>Per cent</i> 5.22
Antimony.....	11.5	11.80	16.8	14.80
Copper (maximum).....	1.05	.09	2.4	.14
Lead (by difference).....	(³)	84.56	(³)	79.84

¹ Analyses of metal in use show an average copper content of 0.08 per cent.

² Analyses of metal in use show an average copper content of 0.15-0.18 per cent.

³ Remainder.

The use of the renovator has resulted in a decided saving to the office. However, it is doubtful if its use can be recommended in plants where the metal is not under close technical control, since the addition of the recovered metal to the stock metal would cause the composition of the stock to vary more rapidly from the standard formula than would normally occur.

LINOTYPE METAL

The continued standardization of linotype metal to the formula of 4.0 to 4.5 per cent tin and 11.5 per cent antimony has brought practically all the linotype metal in the office to this formula, as evidenced by the composition of the metal being returned for remelting. The tin content of a considerable portion of the metal is 4.4 and 4.5 per cent, with the antimony content at the required standard. This has reduced the increase due to correction of linotype metal from 2.31 per cent for the fiscal year 1929 to 1.9 per cent for 1930.

MONOTYPE METAL

The technical control of monotype metal was maintained without interruption. No complaints of crushed or defective type attributable to the metal were received.

STEREOTYPE METAL

A 5-ton electrically heated stereotype pot was installed in the Platemaking Division during the year. Difficulty was experienced in the use of metal of the formula adopted in 1925. This formula required 8 per cent tin, 15.5 per cent antimony, and the remainder lead. It was found that the antimony, being in excess of the eutectic, had a marked tendency to separate from the alloy. Analyses made after the metal was allowed to stand overnight showed the metal in the upper part of the pot to contain between 30 per cent and 40 per cent antimony. The high antimony metal required a temperature in excess of 750° F. to melt it and also caused trouble by freezing in the pump. The plates were honeycombed, many of them being unfit for use.

Research was necessary therefore to determine a formula for the metal best suited for use with the new equipment and one which would make satisfactory plates for the presses. Numerous lots of metal of varying formulas were made and given practical tests. Enlarged photographs were made of stereotype plates cast from these metals, both before and after having been run on the presses, to determine their comparative wearing qualities.

An alloy containing 6.5 to 7 per cent tin, 12.75 to 13 per cent antimony, and the remainder lead was finally chosen as giving the best results from the standpoint of casting and also from wear on the press. This metal is used satisfactorily at a casting temperature of 600° F., and no trouble is experienced with the pump. The plates were found to be sufficiently hard and tough to give 70,000 good impressions on newsprint paper, which is considerably more than normally required, either in the Government Printing Office or in newspaper plants.

Alloys containing more than 7 per cent tin were found to have higher melting points, an increase of 1 per cent tin requiring an increase of 50° F. in the casting temperature before satisfactory plates could be obtained. Antimony in excess of 13 per cent was found to increase the melting point of the metal and to have a tendency to separate from the remainder of the alloy.

It was interesting to note that the major portion of the wear on stereotype plates is due to the battering they receive during the first few thousand impressions. The wear during the first 10,000 impressions was found to be much greater than that shown during the run between 35,000 and 70,000 impressions. It is evident, therefore, that the number of satisfactory impressions obtained from any stereotype plate is governed to a marked extent by the precision of both press construction and stereotyping equipment.

The old gas burner under the small stereotype pot was replaced with a modern thermostatically controlled gas burner of the same type as those installed in the metal section. In addition to effecting a savings of approximately 30 per cent in gas, the new burner keeps the metal at a predetermined temperature at all times, resulting in

better plates with fewer recasts. The upkeep on the new burner is practically negligible. A pyrometer indicates accurately the temperature of the metal at all times.

ELECTROTYPE METAL

During the year 336,619 pounds of old electrotpe plates were exchanged in part payment for new electrotpe metal. The facilities of the metal section were not such as to permit the economical handling of this quantity of metal in addition to the regular work. Due to the high tin content of the old metal, it was found possible to exchange it on practically an even basis for new metal of standard formula of 4 per cent tin, 3 per cent antimony, and the remainder lead. The large supply of electrotpe metal will make it unnecessary to continue the correction of this alloy in the office for some time.

BISMUTH IN TYPE METAL

A study of the effect of small percentages of bismuth in type metals was begun during the year. The first tests are being made on stereotype metal. The data available at this time are not sufficient for a report.

REMODELING OF METAL ROOM

In conjunction with the Division of Construction and Maintenance, plans have been drawn for the remodeling of the metal room to facilitate economical handling of the metal. In connection with this work, three new 7½-ton metal pots and one 5-ton pot have been designed. Two of the 7½-ton pots will be used for linotype metal and the third for monotype metal. The 5-ton pot will be used for electrotpe and stereotype metals and as a reserve for linotype and monotype work.

The 5-ton pot was built and installed during the year. It is equipped with the latest type thermostatically controlled burner, which has reduced the gas consumption approximately 30 per cent. The 7½-ton pots will also be equipped with these burners. The new pot is also equipped with a device designed and built in the office to facilitate the thorough mixing and alloying of the metal by the use of blocks of green wood in a cage which is lowered to the bottom of the pot by a chain-driven worm-screw shaft.

PRINTING INKS

The production of printing inks for the fiscal year 1930 was 178,257 pounds, an increase of 16,122 pounds, or 10 per cent, over 1929.

Waste ink has been kept at the minimum, 4,116 pounds having been discarded during the year as unfit for reclamation. This represents 2.3 per cent of the total production. The waste ink last year also amounted to 2.3 per cent.

The principal inks used by the office have been standardized and the formulas simplified in order to use the least number of ingredients necessary to obtain satisfactory ink. The fewer the ingredients used the less chance there is for variations in the finished product.

Work on the standardization of colored inks used in the office has been continued, and specifications have been developed for several new raw materials.

STUDY OF NEWS INK AND NEWSPRINT PAPER

Cooperative research on newsprint paper and news ink by the United States Government Printing Office and the mechanical department of the American Newspaper Publishers' Association was started in 1928. The purpose of the work was to determine the qualities of newsprint paper and news ink which should be specified and controlled in order to obtain the best and most economical results from a printing standpoint and to develop tests by which newspaper publishers could assure themselves that deliveries were in accordance with specifications.

The results of tests on 256 samples of newsprint paper manufactured by 75 mills which were submitted by 149 members of the association were reported at the mechanical conference in June, 1929. The report covered only tests of the samples, since it was impossible to recommend definite specifications until a study of news ink had been made.

It was deemed desirable to start the work on news ink before proceeding further on the newsprint paper research, in order that the two might be carried on in parallel, as the results obtained in studying one material would be of assistance in studying the other. Due to the amount of work involved in the study of news ink, no further work has been done on newsprint paper with the exception of a few special samples tested at the request of members of the association.

As a basis for the work on news ink 24 samples of the inks used by various members of the association were secured for analysis and study. Considerable difficulty was experienced in the analyses of these inks. Various methods for the analysis of printing inks have been published from time to time, but it was found that the results obtained by those methods did not check with the percentages of ingredients in experimental inks of known composition. It was necessary, therefore, to develop an accurate method for the analysis of news ink, in order to obtain information as to the actual composition of the samples.

More than 50 analyses and tests were made on inks of known and unknown composition before methods were found which would give accurately the amount of the various ingredients used in the manufacture of the inks.

A progress report was presented by the Technical Director at the fourth annual meeting of the mechanical department of the American Newspaper Publishers' Association at West Baden, Ind., in June, 1930.

Full details of the results obtained so far are given in the progress report, which has been published in bulletin form and is available for distribution.

Considerable interest in the work has been expressed by manufacturers of newsprint paper and news inks and also by members of the American Newspaper Publishers' Association.

PRESS ROLLERS AND MOLDED GLUES

Press rollers manufactured during the year totaled 2,325 as compared with 3,254 for 1929, a decrease of 929 rollers or 28.5 per cent. The reduction can be attributed only to weather conditions and careful presswork, since neither the quality of the materials nor the formulas for the rollers were changed.

Research has been conducted to determine the comparative value of different grades of glue for roller making and also to determine the value of a glycerin substitute. Tests were made on several presses using rollers made from a 535-gram jell strength glue and rollers made from the standard 400-gram glue with which 50 per cent reclaimed composition was used.

The higher grade glue yielded rollers which lasted somewhat longer than the standard rollers, but the difference in length of life was more than offset by the increase in cost. No improvement in the quality of the printing could be detected.

If the pressrooms were equipped with relative humidity control, the difference in the life of the rollers would probably be more pronounced, since weather changes necessitate the removal of many rollers before they are otherwise unfit for use.

Tests on the glycerin substitute indicate that it does not yield rollers as long-lived as those made from glycerin. The rollers were found to be more susceptible to high relative humidity conditions than those made from glycerin. Relative humidity control in the pressrooms would eliminate this condition, and would warrant further tests on substitutes.

A total of 102,848 pounds of molded glue was manufactured during the fiscal year 1930. This is an increase of 30 per cent over the amount produced in 1929. No changes were made in the formulas for the various glues.

The new formula for perfect binder glue reported last year has proven very satisfactory during the year.

ELECTROTYPING

Research has been conducted into several phases of electrotyping during the year. Tentative specifications have been adopted for the purchase of graphite for use in blackleading and molding. Tests on graphite purchased under these specifications show a marked increase in the rate of covering the wax cases, with a resultant decrease in the time required to obtain shells of desired thickness.

Work is also being done on the use of addition agents in copper solutions in order to obtain satisfactory shells at a higher current density than can be used under present operating conditions. The results obtained so far indicate that no difficulty will be experienced in obtaining good shells at a current density of 150 amperes per square foot. The present current density used is approximately 70 to 80 amperes per square foot.

With the cooperation of the manufacturers of plating equipment, specifications were drawn for two new, semiautomatic, rubber-lined, copper-depositing tanks. The tanks, which are 20 feet long, will be

loaded and unloaded at one point and are designed to carry approximately 30 cases each on a conveyor system. The continuous passing of the cases by the stationary anodes will give uniform depositing conditions which can not be obtained in tanks commonly used for electrotyping work.

The two tanks and two 7,500-ampere, 8-volt generators have been purchased for installation in the Platemaking Division. New rubber-lined steel tanks to be used for the nickel electrotyping baths have also been purchased.

A study is being made of the variables affecting the efficiency of nickel-depositing baths, and work is now under way to determine the relative value of nickel baths made according to different formulas.

It is desired to express appreciation of the very helpful assistance given in the work on electrotyping by Dr. W. Blum, of the Bureau of Standards. He has made numerous suggestions of great value, both on methods of operation and on specifications for new equipment.

PHOTO-ENGRAVING

Work was started during the year on photo-engraving research problems, but due to the pressure of routine work definite results have not as yet been obtained. A survey of several up-to-date plants was made in company with the foreman of the photo-engraving section. The information obtained was used in planning a new layout for the photo-engraving section.

Studies of collodion and also of zinc plates used in making line cuts have been started.

A comparative study is also being made of the quality of results obtained by electric etching and by ferric chloride etching. The data so far obtained indicate that electric etching is principally of value for deep work.

SUPPLIES TO GOVERNMENT AGENCIES

As in the previous two years, the furnishing of miscellaneous supplies manufactured by the Government Printing Office to other Government agencies continues to be a considerable part of the work of the ink section. Inks constitute the major portion of the supplies.

The total charge for supplies this year was approximately \$24,000, as compared with \$25,500 last year. The estimated savings to the departments for the year was \$33,600.

The following tabulation gives a comparison of the amounts of these supplies furnished the Government agencies during the fiscal years 1929 and 1930:

Kind of material	1929	1930
	<i>Pounds</i>	<i>Pounds</i>
Mimeograph ink, black.....	33,963	29,581
Printing inks, including multigraph, black, and colored.....	3,602	4,649
Addressograph ink, blue and black.....	227	256
Blue-black writing ink.....	¹ 8,015	¹ 9,248
Red writing ink.....	² 4,150	² 6,468
Stamp-pad inks, blue, black, and red.....	818	1,051
Numbering-machine inks, blue, black, and red.....	118	107
Molded glue, including canceling-stamp composition for the Post Office Department.....	3,110	2,843
Paste.....	13,182	16,201

¹ Quarts.

² Pints.

PUBLICATIONS

During the year the following articles prepared by this division have been published by the office in bulletin form, and reprinted in various trade journals:

Preliminary Report on Methods of Determination of pH Values and Total Acidity.

Progress Report on Study of News Ink and Newsprint.

Technical Specifications for Paper Users.

NEW LABORATORY

The drafting of specifications for furniture and equipment for the new laboratory required a considerable amount of work during the year. The new laboratory contains ample space for both routine and research work. Separate rooms are provided for microscopical work, paper analysis, photomicrographic work, metal analysis, and ink analysis. A room for general research where the work will not interfere with routine testing will be available for use in the study of special problems. Library and conference rooms are included.

The laboratory also has two rooms equipped with constant temperature and relative humidity control. One of the rooms, which will be maintained at 50 per cent relative humidity and 70°-75° F., is to be used for the physical testing of both routine and research paper samples. The other room can be maintained at any relative humidity desired, between 40 and 65 per cent, and at temperatures varying up to 85° F. It will be used for textile testing and for any special tests which require controlled relative humidity conditions.

NEW INK, ROLLER, AND GLUE ROOMS

The ink and roller and glue sections will be located on the same floor with the laboratory and thus be under more direct technical control. As in the case of the laboratory, considerable work was required in planning the layout of the equipment for these sections in order to obtain the best results. Some new equipment has been ordered to replace worn-out machinery and to take care of the canning and labeling of inks for other Government establishments.

The humidifying and heating equipment formerly used in the book section of the main pressroom will be used to maintain constant temperature and relative humidity conditions in the roller-storage room. This will permit storing rollers from one season to another, which is not possible when rollers are stored under ordinary conditions.

Respectfully submitted.

B. L. WEHMHOF, *Technical Director.*



